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We want the present address of a certain J. H. Smith, who, we believe, was also known under the name of Geo. Ryall, of Kalispell, Montana. Said Smith went to the Klondike in 1897 and 1898, and left Dawson last December. Readers who know of his present address will confer a favor by sending it to this office.

Freight rates on the lakes have risen beyond all anticipation in the last few weeks, and the end, apparently, is not in sight. Last year iron ore was carried from the head of the lakes to the receiving docks on Lake Erie for 50c. a ton. Last winter contracts were taken by vessel owners to move large amounts of ore this season at 60c. per ton, and few vessel men thought the figure too low. During the early part of the year rates were firm, and as navigation opened late and the tonnage in sight to be carried was heavy, prices gradually advanced. Now that the season of navigation is two-thirds gone the pressure to get forward freight has become very heavy and $1.50 per ton for iron ore is being paid from Two Harbors and Duluth, while grain rates for October are equivalent to $1.80 for iron. These are the highest rates in years, and indicate that furnacemen will find transportation charges, rather than labor cost, the determining factor in the increased prices they will have to pay for Lake Superior ores next year.

As was to be expected, the high price prevailing lately for spelter and consequently for zinc has led to the opening of mines in many parts of the United States outside of the districts which have heretofore been the chief sources of supply. Thus, mining in the vicinity of Dubuque, Ia., has been stimulated greatly. Some of the mines in Tennessee are being reopened, and certain smelters are helping out their supply by fetching ores from Colorado. The last mentioned State has great resources in zinc ore, especially the low grade mixed sulphide ores. The Colorado blende is generally more ferruginous than that of Joplin and consequently less desirable as an ore for smelting, and the higher freight rates have prevented its exploitation heretofore, but since the cost of Joplin ore to the smelters has been so high it has apparently been advantageous to some of them to take the Colorado product. Even the mixed sulphide ores of Leadville can by a careful mechanical concentration be raised to a product assaying 55 per cent. zinc and not excessively high in iron according to European standards. If Colorado were to become a sufficiently large producer of zinc ore it might pay to erect a roasting plant either at the mines or at some central point in order to save freight. There would be a saving of about 15 per cent. on sulphur eliminated, besides the saving on the moisture which the concentrates always contain.

A time of prosperity and abundant money like the present is a time for the revival of old and long buried projects. The Anthracite Coal Operators' Association having abandoned its proposed new railroad to tidewater, we have now a company calling itself the People's Anthracite Railroad Company, which proposes to build a railroad from Tomhicken on the Lehigh Valley road to the Hudson River at Newburg and to make connections from that point into New England over existing lines. We are told by the promoters that "New England consumes yearly 12,000,000 tons of anthracite coal," which it now receives by "circuitous routes and at an exorbitant cost"; and that the new line will bring instant relief to the coal operators. The project is more than 25 years old, and the present promotors seem to have reprinted a large part of the prospectus which was issued in 1872 or thereabouts, when the same line was talked up in connection with Col. E. W. Serrell's "Hudson Suspension Bridge & New England Railroad" project, which many New Yorkers can remember. The company then formed secured some right of way, but operations were stopped by the panic of 1873, and one or two attempted revivals have ended in talk—as the present one probably will.

One would suppose that the utter failure of the Poughkeepsie Bridge line as a coal road would be an object lesson to all projectors of parallel lines; but many people do not seem to learn, even by experience.

CHLORINE AS A WASTE PRODUCT.

The production of caustic soda and bleaching powder by the electrolytic decomposition of salt has long been an attractive field to the industrial chemist, and the number of electrolytic alkali works is now increasing rapidly. At the beginning of 1899 there were three works in operation in Great Britain, eight on the Continent and four in the United States, while ten new works were under construction. The large output of bleaching powder, which is to be expected from these installations, promises to oversupply the market for that commodity and thereby cause great disturbance in all branches of the alkali industry. In fact the conditions in that industry in Great Britain were considerably disturbed in 1898, when a syndicate of German manufacturers, which in 1897 bought up the entire production of bleaching powder in

the United Kingdom for a period of three years at a fixed price, offered the product in the market at a lower price than was paid for it, to the great distress of the Leblanc producers.

The problem which the electrolytic makers have to solve is: Can they work at a profit after the syndicate has abandoned the attempt to control the situation, when the price of bleaching powder is at the low level to which a great increase in production is sure to bring it? It is to be remembered that if the theoretical yield were to be obtained, the chlorine evolved in the decomposition of salt would make 100 lbs. of bleaching powder for each 40 lbs. of caustic soda produced. In our own opinion we are destined to see not only such a low status in bleaching powder, but also the time when it will be almost a valueless product and alkali makers will have to consider better methods of disposing of their chlorine. When that time comes we fear that it will be dark for the electrolytic producers, since it is generally conceded that soda alone can be made more cheaply by the ammonia process than by electrolysis. On the other hand eminent English chemists claim that bleaching powder can be made even now by the improved manganese process at a cost of 50 shillings per ton, f. o. b. cars, which it is doubtful if the electrolytic processes can do. But whatever the outcome of the struggle between the electrolytic and the Leblanc makers, it appears as if the ammonia process had little to fear from the electrolytic.

The bleaching powder struggle is one of especial interest to the managers of gold chlorination mills, because it affects one of the chief chemicals employed in their process. About 8 lbs. of bleaching powder and 15 lbs. of sulphuric acid are required to chlorinate one ton of gold ore. We look to see not only a big reduction in the cost of bleaching powder to them, but also the time when chlorine will be largely a waste product, which alkali manufacturers will have to dispose of as best they can, perhaps in liquid form, so that gold metallurgists may be able to obtain liquid chlorine not only with the advantage of lower first cost, but also with that of dispensing with sulphuric acid and reducing freights. The present trend of things in the bleaching powder industry is about in line with the predictions that we have made from time to time in the past.

THE GOLD PRODUCTION OF THE WORLD.

The year 1898 was marked by a further increase in the production of gold, the total exceeding the high point attained in 1897. The production amounted in all to 13,988,767 fine ounces—equal to 435,076 kilograms, or $289,147,779, expressed in values—exceeding that of 1897 by $50,428,024, or 21.1 per cent.; and that of 1896 by $77,905,604, or 36.9 per cent. A gain of over one-fifth in a single year, and over one-third in two years is a noteworthy event; especially when we consider that the year was marked by no extraordinary new discoveries.

In the accompanying table we give the world's production of gold for three years, as collected for "The Mineral Industry," Volume VII. In most cases the figures are from official returns; in a few countries where no records are kept it has been necessary to estimate the production, but in all these cases we have had valuable aid from producers and authorities familiar with the local conditions. The figures are given, according to our usual custom, in Troy ounces—fine, or pure gold—as the more familiar measure; in metric kilograms, and the values expressed in United States currency. In the comments and comparisons following we use the values entirely, as is customary when dealing with the yellow metal.

The United States last year, notwithstanding an increase in its output of $5,871,644, or 9.9 per cent., had to yield the first place as a producer to the Transvaal. In this country, as we have heretofore noted, there was a large increase in the output from Colorado and a gain in most of the minor producing States; but a decrease in the important State of California, where the production was limited by local conditions, chiefly shortage of water resulting from prolonged drought.

In other North American countries there were large gains. The output of Canada was more than doubled, chiefly by the production of the Yukon region. The Klondike placers, though their return was far below the first extravagant estimates, yielded a considerable amount of gold. In Mexico there was a large proportionate increase—$1,115,531, or 15.6 per cent.—due to the greater attention given to gold mining in that country and the exploitation of mines and districts which have been heretofore neglected while silver mining was the chief interest.

In the South American countries Brazil and the Guianas show large proportionate gains, although their totals are still moderate. In the other States there was little change, and the active exploitation of the undoubtedly large resources which some of them possess is still in the future.

The European production, outside of Russia, calls for little remark. In Russia, which includes the Asiatic province of Siberia, there was an increase of $3,195,928, or 14.9 per cent. over 1897; but the total was still below the high level reached in 1896 by $6,271,299, or 20.2 per cent. The gold mining industry in Russia is now in a state of transition, and will probably show considerable advance in the next few years.

The Asiatic countries, outside of Siberia, show no change of importance. The development of the gold deposits in Northern China has already begun under the Russian influence now dominant there; and this is likely to be the most notable change in Asia during the next five years.

The Australasian production shows an increase of $9,801,202, or 18.7

GOLD PRODUCTION OF THE WORLD.

Countries.	1896.			1897.			1898.		
	Fine Ounces.	Kilograms.	Value.	Fine Ounces.	Kilograms.	Value.	Fine Ounces.	Kilograms.	Value.
North America:									
United States	2,558,433	79,576·0	$52,886,209	2,864,576	89,092·4	$59,210,786	3,148,642	97,932.9	$65,082,430
Canada	134,491	4,183·1	2,780,086	291,583	9,068·6	6,027,016	662,796	20,613·9	13,700,000
Newfoundland	3,000	93·3	62,010	3,000	93·3	62,010	3,000	*e* 93·3	62,010
Mexico	305,216	9,493·2	6,309,181	344,518	10,715·0	7,121,189	398,487	12,393·5	8,236,720
Central America	24,127	750·4	498,450	25,399	*e* 789·9	525,000	25,399	*e* 789·9	525,000
South America:									
Argentina	15,235	473·8	314,907	15,235	*e* 473·8	314,907	15,235	*e* 473·8	314,907
Bolivia	3,144	98·0	65,000	16,076	*e* 500·0	332,300	16,076	*e* 500·0	332,300
Brazil	58,033	1,805·0	1,199,603	70,736	2,200·0	1,462,120	122,481	3,809·3	2,531,687
Chile	68,096	2,118·0	1,407,544	68,102	*e* 2,118·0	1,407,623	68,102	*e* 2,118·0	1,407,623
Colombia	174,165	5,416·8	3,600,000	188,679	*e* 5,868·2	3,900,000	179,008	*e* 5,567·3	3,700,000
Ecuador	6,430	199·9	132,900	6,430	*e* 200·0	132,900	6,405	*e* 199·2	132,400
Guiana (British)	107,773	3,351·9	2,227,662	101,504	3,156·9	2,098,098			
Guiana (Dutch)	23,523	731·6	486,233	32,982	1,025·8	681,748	184,526	5,739·0	3,814,150
Guiana (French)	82,115	2,553·9	1,697,332	59,860	1,861·7	1,237,310			
Peru	5,639	175·4	116,571	5,788	*c* 180·0	119,628	9,958	*c* 309·7	205,827
Uruguay	6,880	213·9	144,600	1,863	57·9	38,506	1,863	*e* 57·9	38,506
Venezuela	39,384	1,224·9	814,067	39,384	*e* 1,224·9	814,067	39,384	*e* 1,224·9	814,067
Europe:									
Austria	105,397	3,278.2	2,178,556	2,174	67·6	44,927	2,174	*e* 67·6	44,927
Hungary				98,645	3,068·0	2,038,903	98,645	*e* 3,068·0	2,038,903
France	10,513	327·0	217,304	8,874	276·0	183,430	8,874	*e* 276·0	183,430
Germany	*a* 79,960	2,487·0	1,652,773	89,417	*a* 2,781·0	1,848,253	91,539	*a* 2,847·0	1,892,116
Italy	8,832	274·7	182,557	10,160	316·0	210,014	10,160	*e* 316·0	210,014
Norway	500	15·5	10,335	498	15·5	10,301	498	*e* 15·5	10,301
Russia	1,499,947	46,653·2	31,005,717	1,042,017	32,408·2	21,538,490	1,196,634	37,217·0	24,734,418
Spain	.....	.....	.....	13,279	413·0	274,480	13,279	*e* 413·0	274,480
Sweden	3,682	114·5	76,107	3,643	113·3	75,299	3,643	*e* 113·3	75,299
Turkey	387	12·0	8,000	386	12·0	7,975	386	*e* 12·0	7,975
United Kingdom	1,353	42·1	27,967	1,354	42·1	27,980	1,354	*e* 42·1	27,980
Asia:									
China	321,296	9,992·8	6,641,190	321,296	*e* 9,992·8	6,641,190	321,296	*e* 9,992·8	6,641,190
India (British)	296,494	9,221·4	6,128,530	353,147	10,983·4	7,299,554	375,704	11,684·9	7,765,807
Japan	34,509	1,073·3	713,300	34,509	1,073.3	713,300	34,509	*e* 1,073·3	713,300
Korea	34,918	1,086·0	721,765	52,927	1,646·1	1,094,000	52,927	*e* 1,646·1	1,094,000
Malay Peninsula	25,000	777·6	516,750	25,000	777·5	516,750	25,000	*e* 777·5	516,750
Borneo	3,628	112·9	75,000	4,838	*e* 150·5	100,000	4,838	*e* 150·5	100,000
Africa:									
Witwatersrand	1,832,329	56,988·0	37,874,240	2,511,544	78,112·6	51,918,607	3,564,487	110,860·6	73,677,936
Other dists., S.A.R.	193,544	6,013·5	4,000,556	232,466	7,230·0	4,805,072	212,522	6,609·7	4,392,825
Rhodesia	*Nil.*	*Nil.*	*Nil.*	*Nil.*	*Nil.*	*Nil.*	20,981	652·5	433,682
West Coast	39,585	1,231·0	818,225	48,363	1,504·1	999,653	34,845	1,083·7	720,248
Madagascar	19,351	601·8	400,000	19,352	*e* 601·9	400,000	19,352	*e* 601·9	400,000
Australasia, 7 cols.	2,092,446	65,070.9	43,250,853	2,539,491	78,981·8	52,491,279	3,013,763	93,732·3	62,294,481
Totals	10,219,355	317,831·6	211,242,081	11,549,095	359,193·1	238,719,755	13,988,767	435,075·9	289,147,779

(*a*) Production of refiners. (*c*) As reported by the Lima mint. (*e*) Estimated.

per cent. The larger part of this was due to the great advance in Western Australia; but there was much activity in gold mining in nearly all the colonies, and nearly all showed progress in their output. The most remarkable increase in gold production last year was in the Transvaal, where the total in 1898 reached the great sum of $78,070,761; a gain over 1897 of $21,352,082, or 37.6 per cent. This production is the more remarkable when we consider that nine-tenths of it—$73,677,936—came from the single district of the Witwatersrand. So great and so continuous a production from a limited area is unparalleled in the history of gold mining; and at the present rate of production it seems quite probable that the output will increase still further. It is not impossible that it may reach a maximum of $100,000,000 in one year before it begins to decline. The impending political troubles between Great Britain and the South African Republic may possibly interefere with the operation of the mines for a time; though in view of the great pecuniary interests involved it seems altogether likely that the differences now existing may be settled without war. So far they have not caused any cessation of mining activity.

Of the four chief gold producing countries the Transvaal in 1898 furnished 27 per cent. of the total output; the United States, 22.5 per cent.; Australasia, 21.5 per cent.; and Russia, 8.5 per cent. These four countries therefore produced 79.5 per cent. of the total, all other countries together having mined 20.5 per cent. It is from these four countries also that any considerable increase is to be expected. They are the countries where mining is most active and most progressive, and where prospecting is most actively carried on. Even in Russia, the least progressive of the four, the improvement in transportation facilities which the chief gold producing localities will secure with the opening of the Siberian Railroad; the exploitation of the gold deposits of Manchuria, and the adoption of improved methods, which has already begun, will add largely to the output in the next five years.

Among the other countries Canada will show a large increase this year and in 1900 from the placers in the Yukon region. How long they will continue large producers is uncertain. It seems probable that the output will decline after a year or two, though the Yukon may continue to be a producer of some importance; especially if, as seems most probable, the work of exploitation is taken up by companies operating on a large scale, with abundant capital and approved methods and machinery. After the first period of discovery and excitement has passed, it will be found that the Yukon is too difficult a country for the individual prospector and operator; and the time of consolidation will begin.

We have heretofore considered ("Engineering and Mining Journal," January 28th, 1899, page 108) the way in which the gold production of 1898 was absorbed. The addition to the gold stock of the world was taken up without any disturbance of values, and there is little diubt that even a still greater output will be quickly absorbed and put into general use either as coin or in the arts in the years to come.

NEW PUBLICATIONS.

"Guide Partique pour la Recherche et l'Exploitation de l'Or en Guyane Francaise." Par E. D. Levat. Paris, France; Veuve Ch. Dunod. Pages, 244; with maps. Price (in New York), $3.

This volume is the outcome of an examination made into the gold mining industry of French Guiana at the instance of the French Government. It it M. Levat has followed much the same methods as in his admirable monograph on "Gold Mining in Eastern Siberia," published some years ago, and with equal success.

The general subject of placer mining in the Guianas has already been treated by M. Levat in condensed articles published in the "Engineering and Mining Journal" and in "The Mineral Industry," Volume VII. In his book, of course, the subject is set forth at greater length. The book treats of the geography and geology of Guiana in general and, of course, especially of the geology of the gold-fields. It considers the history of placer mining in the Guianas—the only kind of mining yet attempted— its present condition, the methods and appliances in use, the labor available and many other matters. Some attention is paid to health conditions and the way in which they can be improved.

M. Levat considers very carefully the way in which the mining field can be enlarged and its output increased. The costs of present methods are analyzed and it is shown how they could be reduced. Dredging the river beds as a plan of working on a large scale is seriously considered, and the author believes that this method will be hereafter an important one in the Guianas. More system in prospecting, and in working the placers is desirable if the output is enlarged. The working is now very largely in the hands of men who have very little capital and employ at most only a few negroes; but it will finally come into the hands of companies working on a large scale, though a considerable time will be required. French capital seems reluctant to go into French colonies, and the resources of Guiana have waited development a long time. What the conditions to be complied with are is shown in the appendix to the book, which gives the mining laws affecting the colony.

M. Levat's monograph is an excellent one; it is accompanied by several carefully drawn maps, showing the gold-fields.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"Report of the Bureau of Mines of Ontario—Volume VIII.—First Part, 1899." Toronto, Canada: Government Printers. Pages, 120; with map and illustrations.

"Fourth Annual Report of the Public Lighting Commission of the City of Detroit, of Michigan, for the Fiscal Year Enging June 30th, 1899." Ford Starring, Secretary, Detroit, Mich.; Published for the Commission. Pamphlet. Pages, 55; illustrated.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials will only be published when so requested.
Letter should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents

Blakeman's Results in Refining lead by Parks' Process.

Sir: In the Mineral Industry for 1898, page 463, I notice the article on lead smelting by Prof. H. O. Hofman in which he cites Blakeman's results in the use of the Parks process. I would like to note some points of difference between the work described and that carried on here.

In the first place, it would appear that Blakeman, in softening his bullion, makes a very large amount of dross; he also removes a large amount of very rich dross from his kettle. Now, by cooling his kettle and driving the copper into the dross, he drives a large amount of gold there also, which causes his dross to assay over 100 oz. gold per ton. His kettle dross, I presume, is put back into the next softener charge, as this is the usual practice; but the large amount of copper going back only increases the amount of softener dross which he sends to the blast furnace, thus keeping a large amount of gold locked up in the furnaces which should be at once turned out as finished product. This can be largely avoided if he will simply matte the charge in the softening furnace and so remove his copper at once. He will find he can produce a matte over 40% copper and carrying little or no gold and produce only about one-quarter the amount of dross he does now. The antimony, arsenic, etc., are, of course, removed in the usual manner.

This method leaves a much larger charge of lead in the furnace carrying practically all the gold and little copper, which makes the work of the retorts and cupel much more simple. The method has been used by myself for some years, both in this country and in the Transvaal, with perfect success.

Again, Blakeman claims that it is impossible to separate completely the gold from the remaining silver by this process; but I found no difficulty in the Transvaal in making such separation with bullion assaying 90 to 100 oz. gold and 20 to 40 oz. silver per ton, while at the works of the Kansas City Smelting & Refining Company, where I turned out over 1,000,000 oz. of silver per month, three-fourths was parted in this way, the resulting silver assaying from 0.01 to 0.02 oz. per thousand oz. of silver.

In looking through his assays of silver crust I find two which contain no gold; this shows that the method is not impossible, but that the proper conditions have not been complied with. This is indicated also from the assays of the silver crust and retort bullion, where the proportion of gold to silver is very much increased by the material going through the retorts. W. Jones.

New York City, Aug 30, 1899.

The Missouri-Kansas Zinc Fields.

Sir: Having just returned from a two months' stay in the Missouri-Kansas zinc region, which I visited with a view of making certain investments, I would like to make use of your widely read journal to sound a note of warning to those whose sanguine nature may tempt them to base too much on the present price of "Jack," backed by the assurances of the many promoters there, here and elsewhere. The first thing that impresses the observer on the ground is, that the man who owns the land and the mine takes no chances in mining. He apparently looks upon mining as a highly dangerous business, and prefers to collect from the lessee 10 per cent. or 12.5 per cent., for all gross tonnage shipped. Long headed old "fee" owner! After paying his tribute of admiration to the land owner, the observer turns to the lessee to find that he is another gentleman whose intelligence prevents him from betting on anything but "a sure thing" mine. He does not have to. He or his representative sits all day in a little shanty and weighs the ore as it leaves the property. He does not mind taking this trouble, for 10 per cent. gross values go to him. The observer begins to get the impression that he has discovered the art of mining without risk—that is, do nothing and charge 10 per cent., when he comes in contact with the second lessee whose privilege it is to take all the risks of mining in which nothing is fixed except the 10 or 12.5 per cent. royalties he pays. These are the three divisions of mining in the Zinc and Lead District, and the investor will have no trouble in buying out any one of the three, provided he pays the price. He can also buy undeveloped lands likely to contain mineral, or get a first lease on undeveloped land by guaranteeing to spend a certain sum in development. He may pay nothing or a good sum for this last, depending upon the propinquity of shafts in ore. I would advise contemplating investors:

First.—Purchase fees of developed tracts 20 to 200 acres, with one or more mills in operation. The would-be purchaser should figure on getting his purchase money back from royalties in at least six years on the basis of the last twelve months' output at present prices. Prices now asked, and often got, are 75 per cent. to 150 per cent. too high.

Second.—As regards purchase of first lease, a first lease can only run 10 years at the most, and there is no guarantee of renewal. It brings 10 per cent. royalty, but is always a risky purchase. You have to get your money back in ten years, or less, depending on the time it has to run. If the second lessees do little more than make expenses, your

"goose is cooked;" as you own nothing but the privilege of collecting 10 per cent. royalty for the time your lease runs. The owner of the fee, however, owns the land and can wait for better times. The first lessees sometimes have to keep the water down to a certain level over a whole property, or make an attempt to do so by working certain sized pumps, otherwise a purchaser at present would have nothing to do but to collect the royalty and speculate on when he is likely to get his money back.

Third.—In a developed second lease mine we deal with the man who does the mining, takes all risks, often does the best part of his own pumping, pays 20 per cent. to 25 per cent. in royalties on zinc, and more on lead. What is left over, less working expenses, is profit. At first sight these mines seem to be bonanzas at current prices of zinc and lead. Zinc now commands $43, on a basis of 60 per cent. fine; some $16 more than the price of a year ago. The mines have been worked when the price was $17 or less. Lead is more stable, but is a small factor in the output. In spite of all this, a close investigation proves that these individual second leases are essentially risky as investments at present prices.

The Missouri-Kansas zinc deposits are not veins, but elongated pockets of workable ore in a mineralized zone, with no outcrops. They are of all sizes, but the small ones predominate. Under the stimulus of present market prices and the presence of eastern capital, a very large number of old abandoned shafts have been cleaned out and more or less equipped. New shafts galore have been sunk. New mills have been put up by the dozen, often wherever there was but a ghost of a chance to make a paying mine. The weak feature of these second leases is that their development seldom begins to justify the purchase price. A Missouri miner thinks nothing of taking you down a 75 foot shaft 5 by 5, lined with 2 by 4's by a hemp rope with a knot at the end to keep the bucket from slipping off, showing you at the end of a 60 foot drift a 4 by 8 foot face of 6 per cent. ore, and asking $8,000—not for the two lots he calls his mine, but for the privilege of mining with 20 per cent. to 25 per cent. royalty to face as a starter. If a mill is on the property, he will run the price up to about $18,000, although the mill complete can be put up at contract for $5,000. "Ore blocked out" as the term is understood by mining engineers, hardly exists, for two reasons; first, the mines have only one level; second, the miners have no capital to justify operation on a large scale. They must have quick returns to pay their men, and therefore mine everything in sight as they go along. Ore in sight—a favorite expression—means nothing but a face of ore which may continue for 200 feet, or as many inches. The owners of these mining and milling privileges are as a rule willing to sell out for a sum equal to one and one-half to two years net returns based on present prices, and at first it seems like an attractive proposition to buy out such a privilege, for say $12,000, put up your own 125 ton mill for $6,000, and make in profits, $250 per week. In 72 weeks you can get your money back—on paper. In practice, however, no mill seems able to run two weeks continuously—due partly to cheap construction and partly to poor handling. In very cold weather the mills do not run at all. You can count on 40 weeks in the year. With natural delays incident to mining, even when in ore, it would take two years to get your money back. If prices drop, you wait so much longer. As a matter of fact, very few second leases make fair returns to investors who have bought during the present boom prices. The royalties and other expenses see to that. I believe that 25 per cent. of the mills are financially on the ragged edge, and that another 25 per cent. make but little more than expenses. It takes from two to three tons of concentrated ore to pay all daily expenses, and an examination of the weekly returns as given in the Joplin "Herald" proves my pessimistic statement, for if you take out of the total tonnage the yield of a few "crackajacks," and the yield of custom mills and hand jigging plants—no small yield, either—and divide what is left by the number of mills in operation, you will see what I mean. A small drop in prices would close out a large number.

The purchase of undeveloped land in a mineral belt, if done by a clear headed, trustworthy agent, is likely to give good returns. Such lands can still be bought at not unreasonable figures and a syndicate able to spend $100,000 by buying in different places will probably make some profit. In my opinion, however, this same syndicate would do better to raise but $25,000 to spend in the development of first leases on undeveloped lands. As a rule, no purchase price, or but a small one, is needed for this purpose, and the money can be spent in drilling wherever a competent manager thinks best. Two drills complete can be purchased for about $1,100 apiece, and the subsequent expenses would be about 40 cents per foot drilled. The drills can easily be sold at any time. Nearly two hundred 300 foot holes could be sunk with such a sum. By using good judgment, one could not lose in such a proposition, and if at all lucky the percentage of gain would make it worth while. The purchase of fees of developed land with the first and second leases on it, at present prices should be looked at askance. Very large returns in actual mining such as are got in Colorado and California are entirely unknown in the zinc regions. Even returns of a second-class can be counted on one's five fingers. It is strictly a poor man's camp, and it is hardly probable that mining on a large scale will obtain. A pockety ground prevents it.

J. S. Elliott.

New York City, Aug. 20, 1899.

THE MEETING OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Specially Reported for the Engineering and Mining Journal by G. P. Grimsley.

The 48th annual meeting of the American Association for the Advancement of Science was held in Columbus, O., August 19th to 26th, with President Edward Orton in the chair.

The Association met in nine sections for the discussion of papers. On the opening day the vice-presidents' addresses were given before the different sections. Vice-President Elihu Thomoson, before the section of Physics, took for his subject "The Field of Experimental Research." He called attention to the fact that we are approaching the limits to the conditions under which we can study the conditions of matter in our laboratories. Liquefied hydrogen gives us the limit of cold, unless we can discover some gas lighter than hydrogen, while the apparent impossibility of getting any substances from which we can make furnaces that will resist the heat of the electric arc restricts our advance in the other direction. We can scarcely hope to reproduce the combination of heat and pressure that exists in the stove. Regarding the progress in investigating electric phenomena, the speaker described apparatus he was devising to get discharges of enormous voltage and spoke of our present knowledge of the Roentgen rays, lightning and the aurora.

Vice-President J. F. Whiteaves, before the section of Geology and Geography, discussed the Devonian in Canada, stating that recent investigation in Canada indicated the probability that in Devonian time, or earlier, there was a land connection between North America and Eurasia.

Vice-President Storm Bull, before the section of Mechanical Science and Engineering, had for his subject "Engineering Education as a Preliminary Training for Scientfic Research Work." Vice-President F. B. Venable, before the section of Chemistry, lectured on the "Definition of the Element," proposing to subdivide matter even beyond the atom, thus accounting for phenomena in the electrolysis of argon, helium and other substances.

Some papers of especial interest read before the section of Geology were:

"Geology of Columbus and Vicinity," Edward Orton, Columbus, O.

"Geology of Oahu, Hawaiian Islands," Charles H. Hitchcock, Hanover, N. H.

"Age and Development of the Cincinnati Anticline," August F. Foerste, Dayton, O. (Introduced by Edward Orton.)

"The Silurian-Devonian Boundary in North America," Henry S. Williams, New Haven, Conn.

"The Geological Results of the Indiana Coal Survey," George H. Ashley, Indianapolis, Ind.

"Some Geological Conditions Favoring Water Power Developments in the South Atlantic Region," J. A. Holmes, Chapel Hill, N. C.

"Discovery of New Invertebrates in the Devonian Beds of Wyoming," E. H. Barbour and W. C. Knight.

"A Consideration of the Interpretation of Unusual Events in Geological Records, Ilustrated by Recent Examples," Frederick W. Simonds, Austin, Tex.

Among the many papers read before other sections the following were of special interest to the mining and engineering profession:

"The Relation of Physical Chemistry to Technical Chemistry," Wilder D. Bancroft, Ithaca, N. Y.

"Electrical Mining of Bituminus Coal," Prof. Wm. S. Aldrich, University of Illinois.

"The Determination of Nickel in Nickel-Steel," George W. Sargent, Reading, Pa.

"On the Universal Distribution of Titanium," Charles Baskerville, Chapel Hill, N. C.

"Analysis of Oils," Augustus H. Gill.

"The Composition of American and Foreign Dairy Salt," F. L. Will.

"Notes on Testing Soils for Application of Commercial Fertilizers," H. A. Weber, Columbus, O.

"Some Experiments on Combustion in Locomotive Boilers," J. W. Shepherd, Rose Polytechnic Institute.

Among the public lectures, Prof. C. E. Munroe's "Application of Modern Explosives" attracted considerable attention.

The election of officers resulted as follows:

President—R. S. Woodward of Columbia University, New York City.

Vice-Presidents—Section A, mathematics and astronomy, Asaph Hall, Jr., of Ann Arbor, Mich.; section B, physics, Ernest Merritt, Ithaca, N. Y.; section C, chemistry, James Lewis Howe, Lexington, Va.; section D, mechanical science and engineering, J. A. Brashear, of Pittsburg, Pa.; section E, geology and geography, J. F. Kemp, New York City; section F, zoology, C. B. Davenport, Cambridge, Mass.; section G, botany, W. Trilease, St. Louis, Mo.; section H, anthropology, A. W. Butler, Indianapolis; section I, economic science and statistics, C. M. Woodward, St. Louis, Mo.

Permanent Secretary—L. O. Howard, Washington, D. C.

General Secretary—Charles Baskerville, Chapel Hill, N. C.

Secretary of the Council—William Hallock, New York City.

Secretaries of Sections—Section A, W. M. Strong, New Haven, Conn.; section B, R. A. Fessenden, Allegheny, Pa.; section C, A. A. Noyes, Boston, Mass.; section D, W. T. Magruder, Columbus, O.; section E, J. A. Holmes, Chapel Hill, N. C.; section F, C. H. Eigenmann, Bloomington, Ind.; section G, D. T. Macdougal; section H, Frank Russell, Cambridge, Mass.; section I, H. T. Newcombe, Washington.

Treasurer—R. S. Woodward, New York City.

On August 24th the geologists spent the day in glacial study in the Hocking Valley. In the evening they were joined by the remainder of the Association in a visit to the gas fields near Lancaster, where, through the courtesy of the Central Ohio Natural Gas Company, several of the wells in operation were examined and also some of the new wells.

On August 26th an excursion was taken to the coal fields about Corning and Hollister, under the guidance of Mr. R. M. Haseltine, State inspector of mines. The party visited the Sunday Creek Coal Company's mine No. 8, that has been equipped recently with an electric plant driven by power obtained from the waste gas of the nearby oil wells, and also inspected Mine No. 16 of the Courtright Coal Company. Another excursion was taken on the same day to Lake Erie, where the glacial scourings were examined and also the stontia cave at Kelly Island, in Put-In Bay.

Various local excursions and receptions by the University and city organizations added to the enjoyment of the visiting members.

It was decided to hold the next meeting in New York City, June 25th to 30th, 1900. The early date was chosen in order to permit the scientists to go direct from the meeting to the Paris Exposition.

THE SANTA ELENA MINE, MEXICO.

Written for the Engineering and Mining Journal.

On a recent visit to Mexico my time was passed in the State of Sonora and I gathered many interesting particulars of mines which had been and which are now large and profitable producers. But my informants were severely critical on the mistakes made by foreign companies who sent out managers who were either incompetent or negligent as to their duties. Among the mines of which great expectations are entertained is the property known as the Santa Elena, now owned by a London company, the Consolidated Gold Fields of Mexico.

I visited this property and stayed there some time. It is situated 120 miles northeast of Hermosillo and about 4 miles east from the Sonora River, at an altitude of 3,500 ft. The area owned by the company comprises about 30,000 acres, of which about 10,000 are classed as mineral lands and the balance agricultural. The outcrop of the lode which is at present being exploited rises prominently above the country rocks and is undoubtedly a deep seated fissure of exceptional width. The ore is a hard quartz, an analysis of which is as follows: Insoluble, 81.15 per cent. (mainly silica with a little felspar); copper, 0.15; iron oxide, 3.92; alumina, 0.53; manganese oxide, 1.01 (partly as peroxide, and partly as carbonate); calcium oxide, 7.41; zinc, 0.005; magnesia, 0.16; sulphur, 0.205; carbonic acid, 4.08; moisture (at 110° C), 0.63; traces of soda, organic matter, gold, silver, loss, 0.75; total, 100.00. The country rock is porphyry.

Under the Mexican owners about 200,000 tons were originally quarried from the outcrop and large excavations are shown for a distance of several hundred yards and in places of a width of 70 ft. and a depth of 120 ft. No timbering was used here and practically none is required in the lower workings. The lode has an easterly and westerly trend and dips to the south at an inclination of about 65°, and has a width of from 25 to 100 ft. At about 300 ft. from the outcrop a vertical 3-compartment shaft 13 ft. 8 in. by 5 ft. in the clear has been sunk in the hanging wall to a depth of 420 ft., and will intersect the lode at a depth of about 700 ft. From this shaft two cross-cuts have been run, one at a depth of 250 ft., which cut the lode at a distance of 248 ft. and one at a depth of 350 ft. which cut the lode at a distance of 195 ft.

On the 350-ft. level very little development work has been done and mining has been principally confined to the 250-ft. level and two levels above, the D and San Juan.

The 250-ft. level is driven on the vein for a distance of 1,115 ft. to the east from the main cross-cut and to the west for a distance of 220 ft. The west drift is in first class ore and for its length shows an average of about $23 per ton gold value. To the east, at a distance of 95 ft. from the main cross-cut, a prospecting cross-cut has been driven to the hanging wall, and here a seam of ore about 8 in. wide lying against the hanging wall was encountered and assays from this seam show values as high as $1,400 per ton. At a distance of about 140 ft. a dyke of andesite is encountered. This dyke intersects the lode at right angles with an inclination to the west, and has a width of about 70 ft. The drift has been carried through this dyke but no pay ore has been encountered in volume until it reaches a point about 200 ft. beyond the dyke, and here good ore is met and followed for the distance of the level. The ore in proximity to the dyke is heavily charged with manganese oxide but further away is generally a clean quartz. The analysis given above is from about 150 samples taken throughout the fissure.

The D level is 67 ft. above the 250 ft. and has a length of 850 ft. on the course of the lode. A stope between this level and the 250 ft. is being mined for a width of 7 ft. and has an average value of about $21 per ton.

The San Juan level is 70 ft. above the D and has a length of 1,025 ft. Here three stopes are being worked and the width mined is from 6 to 20 ft., with average values running from $8 to $35 per ton. These levels do not connect with the main shaft, but are entered from an incline tunnel driven from the surface and connecting with the San Juan or from the 250-ft. level by ladder-ways.

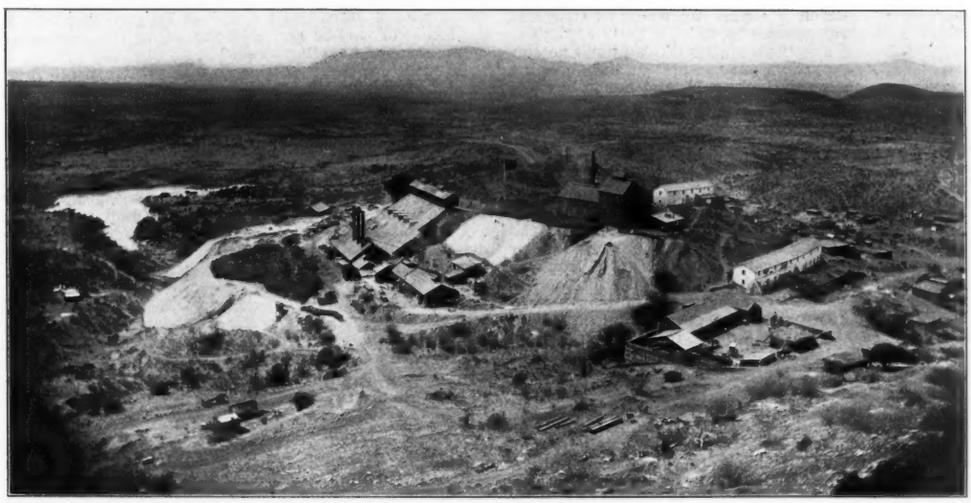
Various winzes connect these levels with the 250-ft. level, and all ore broken is dropped to this level and trammed through the 250-ft. main cross-cut to the shaft. The development work aggregates about 8,000 ft.

The fissure in all places exposed is strong and well defined and mineralized for its entire width, but varies greatly in value. From about 20,000 tons of ore mined by the present company the gross value appears to have averaged $14 per ton from stopes of a width of from 6 to 20 ft. The ore carries its value in gold and silver in proportions of 65 per cent. gold and 35 per cent. silver. Fine gold is reckoned at $20.50 per oz. and fine silver at 60c. per oz.

The surface equipment consists of a double cylinder direct-acting hoisting engine with 14-in. cylinders and 60-in. stroke at the main shaft, the gallows frame of which is 42 ft. in the clear. Here also is an air compressor of 12-drill capacity. About 150 ft. from the shaft is the mill, which comprises 12 batteries of 5 stamps each. The trucks conveying ore from the mine are trammed direct from the cage to the mill, where it is dumped over grizzlies, and that passing through goes into the ore bins and the coarse falls on to a floor from which it is shovelled into the rock breakers which feed into the same bins. The mill is driven by a Corliss engine of 500 H. P. The cylinder of this engine is 26 by 60 in.

The cyanide plant comprises 16 tanks 20 ft. in diameter by 6 ft. high, and two solution tanks 25 ft. in diameter by 15 ft. high; three zinc boxes 14 ft. in length, 2½ ft. deep and 20 in. in width. The extractor house is 24 by 40 ft. There are also two sump tanks 20 ft. in diameter and 10 ft. high, a solution pump, a vacuum pump, a Johnson filter-press, two clean-up tanks and a furnace for drying the cyanide slimes. The ore tanks are in two rows, the upper having side discharge and the lower bottom discharge doors. The assay office, carpenter's shop, machine shop, foundry and blacksmith's shop, are well equipped.

The town of St. Elena is owned by the company, which has jurisdiction over it; all residences are let to employees, who pay a moderate rent.



SANTA ELENA MINES FROM THE OUTCROP.

The treatment of the ores has been a question that has cost a great deal of time and experimental work, due largely to the volume and value lost in the slimes. The ore crushed is passed over electro-silver plated copper plates and delivered by a launder into the cyanide vats. Here the slimes are separated and flow into a slimes pond, where they are kept. The sands are treated by cyanidation, with an extraction of from 70 to 75 per cent. of their gold and silver value. The plate saving is about 20 per cent. Recent experimental work on the slimes has been satisfactory and when a plant is decided upon and erected for their treatment the property will doubtless show profits up to the expectations of its confident proprietors.

The facilities for economical working are good; working expenses are now $4 a ton and may be reduced to $3.50. The extensions of the St. Elena vein have been traced for some miles through the company's property, but as yet are not prospected sufficiently to enable one to form a definite opinion as to their value.

MINERAL WEALTH OF THE EGYPTIAN SOUDAN.—Iron ore is found in the Bahr-el-Ghazal Province, and also in Darfur, while gold mines were at one time worked in the mountains south of Fazogl. Further investigations as to the mineral wealth of the Soudan are impossible until the country is more settled.

ELECTRICAL IGNITION OF FIRE DAMP.—The results of experiments on the ignition of fire damp and coal dust by means of electricity were given in a paper by Herr Heise and Dr. Theim, recently read before the Institution of Mining Engineers. The sum of the results obtained show that in general the amount of electrical energy capable in certain circumstances of igniting fire damp need be extremely small. This amount cannot be definitely fixed, however, as it depends not only on the quantity of energy, but on the mode of its application and other attendant circumstances. In any case, all visible sparks may be looked upon as dangerous. Explosions of coal dust alone appear to be impossible of production by electricity, unless special classes of coal dust behave differently from those tried.

AN EXPLANATION OF THE RAPIDITY OF THE BERTRAND-THIEL PROCESS.

Written for the Engineering and Mining Journal by Henry M. Howe.

Much of the skepticism concerning the greatly increased output per furnace claimed for the Bertrand-Thiel variety of the basic open-hearth process is, I fancy, due to our seeing at first no good explanation of it. The explanations which have been offered have seemed to me very difficult to follow. On considering the matter, some points which might easily escape notice occur to one. These I will now give, trying at the same time to clarify the explanations already given.

The process applies to cases in which pig iron must be treated with little or no scrap iron, cases that in which the pig-and-ore process might be used. It consists essentially (1) in melting the cast-iron in one furnace, in which its purification is begun, much of the phosphorous and silicon of course rapidly oxidizing and scorifying; (2) in melting simultaneously whatever scrap is available, together with ore, in a second or lower furnace, where, unprotected by carbon, silicon or other equivalent elements, the iron becomes much oxygenated; (3) in then tapping the metal from the upper into the lower furnace, and (4) diverting in transit the slag of the upper furnace. The charges thus mixed react very rapidly, and the fining or femoval of the carbon, phosphorus, etc., is reported to be extraordinarily rapid. This rapidity is chiefly what we are called on to explain.

1. Removal of Slag.—For the first washing of a very dirty object, relatively dirty water does pretty well; when the object has been washed nearly clean, we need clean water to remove the last traces of dirt. To remove the first of the phosphorus of cast-iron the slag need not be extremely basic; a moderately basic ore suffices, like moderately clean water. To remove the last of the phosphorous needs a more basic ore. Clearly, for given quantity of phosphorus and silicon in the cast-iron, and hence of phosphoric acid and silica resulting from their oxidation, the more basic the slag the greater will be its quantity, since it is made basic by adding lime to it. If now we keep the slag in the furnace throughout the process, as in common practice, the whole of that slag must receive additions of lime great enough to make it basic enough to remove the last of the phosphorus, and the quantity of slag must be correspondingly great. If, however, we wash out the first of the phosphorus and silicon with a slag which is relatively acid, and hence has had but relatively little lime added to it, divert that slag, and to the second slag alone add enough lime to make it basic enough to remove the last of the phosphorus, the total addition of lime will manifestly be much less, and hence the total quantity of slag formed will be by just so much less.

This is what happens in the Bertrand-Thiel process; there is a smaller total quantity of slag formed per unit of iron treated.

Further, only part of the slag actually made remains throughout the process, that of the upper furnace being diverted and removed. So, for both reasons, the average quantity of slag present per ton of iron per hour is smaller than in common open-hearth practice with like conditions as to quantity and kind of metal. Consequently there is just so much the more room in the furnace for the charge of metal, and here we have a first cause of increased output; more room available for metal in any given furnace. The increase of output would not, however, be in so large a proportion as the increase in available room thus effected.

This advantage indeed would be shared by any scheme in which the early slag is removed, and a second one formed for removing the last of the phosphorus. The Bertrand-Thiel process does not originate but adopts the plan of diverting the early slag; it, however, does it in a very ready way, by diverting it in transit from one furnace to another. The transfer-plans which have been outlined for tipping furnaces, the Campbell and the Wellman, could effect the same thing.

Note that this advantage is quite apart from any hastening of the process due to the metal being hotter because the layer of slag which separates it from the flame—the source of heat—is thinner, and from any saving of fuel due both to this cause and to having a smaller quantity of slag to keep hot. Let us purposely pass by debatable points like these.

2. Slagless Iron Oxide.—In common open-hearth practice we oxidize the foreign elements by iron ore; its gangue must be neutralized by large additions of lime; it thus yields much slag. In the Bertrand-Thiel process the oxidation of these same foreign elements is effected in large part, not by gangue-bearing ore, but by gangueless iron oxide formed in the lower furnace by the oxidation of the scrap-iron there, before the molten pig from the upper furnace is run into it. Here, then, we have a special reason why there is less slag in the Bertrand-Thiel than in the common open-hearth process, for given metal. Here, as in (1), the lessened quantity of slag gives just so much more room for metal, in any given furnace.

3. Higher Temperature.—Mr. Thiel and Mr. Hartshorne claim a higher temperature for the metal at the moment of the reaction of the molten pig from the upper furnace on the molten scrap in the lower one, and they claim that this higher temperature greatly hastens the reactions, the oxidation and removal of carbon and phosphorus. No clear reasons for this higher temperature, other than that of the layer of slag—surely something of a heat insulator—is thinner, have come to my notice. But is there not one close at hand?

When we treat pig alone, or nearly alone, in common open-hearth practice, we melt cold pig-iron and cold ore; when melted the flame tends to raise them towards its own temperature, but of course it can never of itself bring them quite to it. They react on each other exothermically; starting at a little above the melting point of cast-iron ,they raise their own temperature, and thereby lessen the amount of heat which will pass to them from the flame. Should this exothermic reaction bring them nearly to the temperature of the flame, they would practically cease receiving heat from it.

In the Bertrand-Thiel process we preheat the pig as nearly to the temperature of the flame as in the common case; and we similarly preheat the oxygenated scrap and ore; and we then mix these highly preheated substances. They, as before, react exothermically; but the temperature which they will now reach may be much greater than in the common open-hearth practice, because of the exalted initial temperature of the substances when they are brought together; that is, at the moment of their reaction. The temperature to which their reaction carries them is the higher because they are the hotter when that reaction begins; they start on a higher plane of temperature, and a given upward leap carries them to a higher absolute temperature.

We can thus readily understand why the temperature in the Bertrand-Thiel process should be higher than in common open-hearth practice under otherwise like conditions.

4. An Obvious Objection Met.—In considering this subject elsewhere I objected that the speed of oreing, that is, of the removal of carbon and phosphorus, was in common practice limited by the capacity of the furnace. Oreing causes boiling; the faster we oxidize carbon and phosphorous the faster does carbonic oxide evolve, the more furiously and higher does the metal boil. We must not add ore so fast that the metal will boil out of doors and into ports. But why should a greater speed of boiling be in this respect permissible when effected by the oxygenated iron of the Bertrand-Thiel process, than when effected by iron ore as in common open-hearth process?

May it not lie just here in this question of temperature? A very thin liquid froths but little; the viscous white of an egg you beat readily into a pretty permanent froth; can you so beat the more mobile alcohol, or even water? But little froth forms on "plain soda water;" but the relatively viscid "cream soda," drawn from the same tap froths high. The mobile liquid allows the gas bubbles to escape quickly; the viscid or soapy holds them entangled long. Now, if it be true, as is most positively asserted and readily understood, that the charges in the Bertrand-Thiel process are hotter when reacting than the boiling charge of the common open-hearth process, may not the greater fluidity both of metal and slag, due to this higher temperature, explain why this more rapid oxidation and evolution of carbonic oxide does not cause more frothing than the slower oxidation and evolution of the common open-hearth process? Or, in other words, why the greatest amount of frothing permissible without running out of doors and into ports should occur with a more rapid evolution of gas, and thus with a more rapid oxidation of carbon and phosphorus, in the Bertrand-Thiel than in the common open-hearth process?

Finally, of the two, the slag is probably far more viscid at given temperature than the iron, and to it the frothing is therefore probably chiefly due. In the lower furnace of the Bertrand-Thiel process the relatively small quantity of slag should therefore, for a given conditions, lead to relatively little frothing.

To sum up, the greater rapidity and hence output claimed for the Bertrand-Thiel process may be explained.

1. By the greater room available for metal; a, because less slag is formed owing to washing out much of the phosphorus and silicon with a relatively acid slag, and to oxidizing by means of gangueless iron oxide instead of iron ore; b, because since the first slag is removed, a smaller proportion of the total slag is present, on an average of the whole time.

2. By the higher temperature, due to highly preheating the pig and iron oxide before their reciprocal reaction begins.

3. It is made possible by the greater fluidity resulting from that higher temperature of metal and slag, by the small quantity of final slag, and possibly by the larger ratio of iron oxide to lime in that slag.

THE ELECTROLYTIC REFINING OF AURIFEROUS SILVER.—Dietzel, in a paper read before the German Electrochemical Society, states that an instance of the most simple case of the electrolytic decomposition of alloys is as follows: If the anode consist of silver containing gold and an acid solution of silver nitrate is used as an electrolyte, silver is traveling to the cathode, and the same quantity is being added to the electrolyte at the anode; the gold remains at the anode, and the electrolyte is not altered. Most of the practical cases in the electrolytic refining of metals are, however, much more complicated, as at the anode, besides one part of the anodic material dissolving, the other part is altered chemically, forming combinations with the elements of the electrolyte; in this case the electrolyte is also altered. If the combination formed at the anode is soluble in the electrolyte, the whole metallic concentration of the electrolyte is not altered, but the percentage of each of the metals is. The percentage of the metal deposited at the cathode decreases in the electrolyte and the percentage of the other metal increases, the sum of all the percentages being unchanged. If the anode is silver containing considerable copper, and silver is intended to be deposited at the cathode, the silver percentage of the electrolyte decreases and the copper percentage increases to such a degree that it would soon be impossible to deposit pure silver at the cathode. If, therefore, a silver salt requiring a lower decomposition pressure is used as the electrolyte, the assistance of some auxiliary chemical process becomes necessary to diminish the increasing copper percentage and to increase the diminishing silver percentage in the electrolyte. Instead of this, it is much more convenient to use the salt requiring the higher decomposition pressure as the electrolyte, to deposit copper at the cathode, and to replace the silver which is dissolved at the anode, by an equivalent quantity of copper in a special process, before the copper is deposited at the cathode. In this case the composition of the electrolyte remains nearly unaltered. This method has been successfully used for more than six years at Pforzheim, Germany, where about 60 kg. of an alloy is decomposed per day. This alloy, consisting of fused wastes, contains 40 to 65 per cent. copper, 22 to 50 per cent. silver, 5 to 7 per cent. gold, and small quantities of other metals. A slightly acid solution of copper nitrate is used as electrolyte. At the anode copper and silver are dissolved, copper is deposited at the cathode, the gold remains undissolved and the silver is recovered in another tank by special process, which is described. The current is about 150 amperes per square meter at 2½ to 3 volts. The cost of the process is covered by the value of the refined copper. He thinks that the same method can be used for decomposing other alloys, as for instance, refining nickel and copper.

COPPER RESOURCES OF CALIFORNIA. V. .—METALLURGY OF THE ORES.

Written for the Engineering and Mining Journal by Herbert Lang.

With one exception, the copper ores of the State are treated by smelting. At various points, usually in the vicinity of the mines, smelting works, often of considerable magnitude, have been and are being erected, the output of which has reached a very high figure and gives promise of increase, especially should the present price of copper be maintained. The following list contains the names, the locality and the daily capacity of the existing and the projected copper-smelting plants:

In operation:		
Selby Works, San Francisco Bay	100	tons
Keswick Works, Shasta County	600	"
Ivanpah Works, San Bernardino County	40	"
Quiescent:		
Afterthought Works, Shasta County	30	"
Copperopolis Works, Calaveras County	75	"
Hall's Works, Nevada County	25	"
Repairing:		
Satellite Works, Calaveras County	40	"
Building:		
California Copper Co.'s Works, Madera County	100	"
Newton Works, Amador County	80	"
Proposed:		
Stillwater, Shasta County		"
Copper King, Fresno County		"

Total, eleven plants, with a total nominal capacity of over 1,200 tons daily. At least a dozen other proposed smelters might be included in the list, perhaps justifiably, but beyond the two mentioned, nothing has been definitely decided upon as to the details of construction in any instance, as far as I am aware.

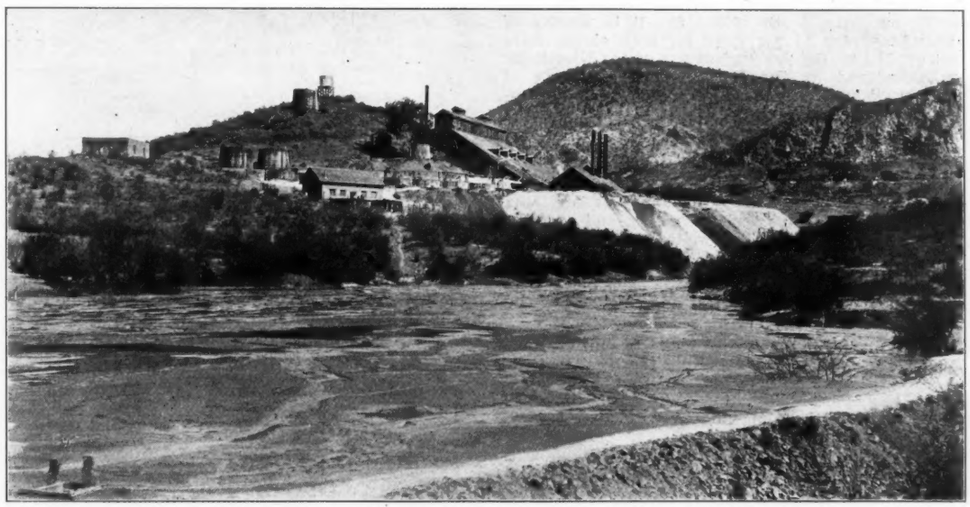
One establishment, and only one, the Ivanpah Works, makes metallic copper, the rest producing matte for shipment to the Eastern refineries for further treatment. The Selby Works make, as a valuable by-product, a quantity of bluestone for sale to the local consumers. This company, whose plant is one of the most complete in the world, does a general custom business, having no mines of its own. Primarily the business was lead smelting and refining, but it has successively added other branches, including copper matting, which is pursued with great skill and success. Reverberatories of large capacity are used, fired with oil—a promising innovation on this coast, where the blast furnace is chiefly in use for that purpose. Hall's plant in Nevada Co., contains a single reverbatory of moderate capacity, not now in use; and there is another at the Keswick Works, used, I believe, for matting fine ores, flue-dust, etc. This furnace burns coal instead of oil.

The blast furnace practice of the various California smelters presents little novelty. The furnaces for the most part are water-jacketed stacks of ordinary construction, such as for many years have been upheld as standard by their builders, the iron-works people, who detest any innovation on their old methods of construction. Any increase in weight is heralded as an improvement, while real improvements in the way of making the apparatus cheaper or handier to work are unknown. The Orford stacks, constructed in the well-known manner of brick, and without jackets, have been tried, but have gone out of use, giving place to jacketed cupolas, which require less care and skill in handling. The capacity of the furnaces varies from 30 tons daily, in the 36-in. Afterthought stack, to 250 tons in the case of the 150-in. prismoidal furnaces at Keswick—an almost unequalled capacity.

As all the plants, excepting that at Ivanpah, work on sulphide ores wholly or in part, roasting is required preparatory to smelting. This is done in one case only, that of the Selby Works, by mechanical furnaces; while elsewhere the ores are heap-roasted, a wasteful and imperfect process. I believe that a small proportion of the sulphides of Keswick are now roasted in an automatic calciner like those at the Selby Works.

The average copper contents of the matte produced in these various works may be 40 per cent.; which is as high as can be reached by the ordinary methods. It would only be practicable to obtain a richer product by substituting for the crude method of heap-roasting a more thorough calcination in automatic roasters, with a fusion in reverberatories; or else the use of heated instead of cold air in the blast furnaces, which burns off a greater proportion of the sulphur and prevents the reduction of any part of the sulphates or oxides which may have been formed in the roasting. There is not, however, very much opportunity for improvement in the mere production of matte; it is only when a richer character of final output is sought that abundant room for improvement is found. The weak point in the California copper metallurgy is and always has been the working for matte instead of metal—a feature forced upon the mine owners through the scarcity of metallurgical knowledge and experience, arising in part from the isolated position of the smelting establishments on this coast. At this era it seems strange that with a freight rate of from $12 to $20 per net ton to pay, added to the cost of sacking, and the certain though variable loss of valuable material in transit, that producers should still ship to the Atlantic seaboard a product of which three-fifths consists of worthless iron and sulphur; on which, moreover, a treatment charge has still to be paid on its arrival at the point of destination. As far as the absolute difficulty of the work is concerned, it is as easy to make copper bars as copper matte. The procedure is somewhat more complicated, certainly, but the apparatus required is not always more extensive, and we can, when forced to do so, make use of the single blast furnace and the roast yard, which alone constitute the working plant at most California smelters, to carry on both the reduction of the ore to matte and then the forwarding of the matte to the metallic form. By combining these operations in our works instead of carrying them on in two different establishments 3,000 miles apart, an additional profit of from 1 to 1½ cents per pound of copper would be secured, reckoning the cost of eastward freight on bars at 1c. per pound.

Admitting a monthly production of 1,000 tons of copper, the loss by shipping the matte eastward would vary from $20,000 to $30,000 per month, or from $240,000 to $360,000 per annum, all of which is lost to the producers.



SANTA ELENA MINE FROM THE SLIMES DAM.

The exception which I have noted to the invariable method of treating our ores by smelting consists in a single plant devoted to their lixiviation by means of ammonia, a somewhat obvious, but, as far as I know, an untried plan. An ingenious and original attempt which is involving the construction of extensive and complicated apparatus is now going on in the desert region near Vanderbilt, in the southeastern part of the State and close to the Nevada boundary. The ores there are oxidized and would seem to furnish an ideal opportunity for an experiment of this sort. That they carry silver would possibly not be an obstacle, inasmuch as certain forms of this metal are also soluble in ammonia; whence I conclude that it is the intention of the projectors to attempt its recovery likewise by the agency of the same solution. The whole matter presents a highly interesting field for investigation, and it is to be hoped that the intelligent manager-chemist will publish in full the results of his work, which, in my opinion, is the plain duty of those who attempt novel metallurgical processes, whenever business reasons do not prevent. Let the results be what they may, the art generally will gain by their truthful publication, and those who would adventure upon the same lines will have the better guide.

MINERAL IMPORTS AND EXPORTS OF SPAIN.—The imports of mineral fuel into Spain for the six months ending June 30th were 880,529 metric tons coal and 128,591 tons coke. Imports of iron included 947 tons pig iron, 3,051 tons wrought iron, 11,367 tons rails and 952 tons tin-plates. Exports of minerals are reported by the "Revista Minera" as follows, in metric tons:

	1898.	1899.	Changes.
Iron Ores	3,606,493	4,362,940	I. 756,447
Copper Ores	418,761	491,018	I. 72,257
Zinc Ores	30,528	42,778	I. 12,250
Lead Ores	4,276	4,307	I. 31
Salt	108,169	175,624	I. 67,455

Exports of metals included 20,570 tons pig iron (22,126 tons in 1898); 13,276 tons copper (15,274 tons in 1898); 81,848 tons lead (94,781 tons in 1898).

RHODE ISLAND COAL.

Written for the Engineering and Mining Journal by R. H. Norton.

It will doubtless be news to many who consider themselves fairly well informed on the coal industry of the United States to learn that the Rhode Island coal mines are again about to be worked. These mines have been worked intermittently for upward of 100 years; indeed, many well-informed persons are of the opinion that the first coal mined systematically in the United States was mined here. Be that as it may, however, it is quite certain that the mines have been shut down for a number of years, not having been regualrly worked since the close of the civil war, though several attempts have been made. There are two slopes, about half a mile apart, each down 1,600 ft. and connected at the bottom by a level driven in the coal. The seam is about 7 ft. thick, dips at an angle of about 18 deg., but the coal is so deficient in volatile matter that it is difficult to ignite, and in its natural state even with a strong forced draft, does not burn satisfactorily. In fact, although repeated efforts have been made, since the mines were first opened, to find a market for the coal or devise means by which it could be made a desirable fuel, all such efforts in the past have resulted in dismal failure.

Within the past few months, however, it has been proved to the satisfaction of the present owners that this area of coal can be utilized. Preliminary experiments disclosed the fact that even the culm that has been lying on the bank for at least 25 years, some of it longer, if thoroughly incorporated with a binder containing a large amount of volatile matter would make an excellent article of fuel for which a ready market could be had. This resulted in the organization of the Compressed Coal Company of New England, with general offices at 816 and 817 Tremont Building, Boston, Mass. This company has gone to work in a systematic manner to open up the mine; a large pumping plant has been put down, and at the time of the visit of the writer, the slopes had been pumped out to a depth of 800 ft. It is worthy of note that although abandoned for 25 years, so far both slopes have been found in excellent condition. On the surface one of the Nirdlinger Eggette machines, manufactured by the Fuel Patents Company of Philadelphia, has been erected and is doing excellent work. By a simple device, fixed proportions of coal (culm alone at present is being used) and melted pitch are delivered into a large hopper, passed on to a mixer, where the mass is thoroughly blended, and thence going direct to the rolls, which mould the mass into "eggettes," which are hard and compact and stand handling and shipment much better than the coal in its natural state. The writer was accompanied by Mr. Max Nirdlinger, the inventor of this machine, and its utility and capacity are now being practically demonstrated. The writer saw five tons of the mixture prepared and followed the process from start to finish. There is no loss or waste of material, and the five tons were put through and manufactured into briquettes in 25 minutes. This is only half the capacity of the rolls, and two additional mixers are being put in, thus ensuring an output of 20 tons an hour.

This process ought to interest owners of coal lands in our Western States. Many years' experience mining and handling the lignite of the Rocky Mountains and Pacific Slope have demonstrated that the greatest objection to these coals is their perishable nature. As a rule they will not stand shipment or exposure to the atmosphere.

WATER REQUIREMENTS FOR STAMP MILLING.

Written for the Engineering and Mining Journal by Geo. W. Riter.

How much water is necessary to operate a stamp mill of any given size or capacity? Or, in other words, with how little water is it possible to carry on operations? This question is one of considerable importance to prospective mill builders, especially in regions where the available water supply is limited. The writer has seen but few published figures on this subject; he therefore gives below some data covering a period of 27 months from the operations of the Eureka-Hill Mining Company's plant at Eureka, in the Tintic Mining District, Utah.

The process used in treating Eureka-Hill ores is a combination of concentration and pan amalgamation. The ore is crushed by stamps and is then concentrated on Frue vanners for the extraction of base sulphides and heavy minerals. The vanner tailings are run into settling boxes and drained, to be afterwards treated in amalgamating pans for the extraction of such silver and gold values as cannot be saved by concentration. The mill is located upon the company's mining ground above the hoisting works; it contains 100 stamps, 50 Frue vanners, 32 pans, 16 settlers and the necessary agitators, clean-up pans, retorts, furnaces, etc. Power is furnished by a Corliss compound noncondensing engine.

The mines of this part of Tintic District are quite dry, and all water for mining and milling purposes has to be pumped from sources diftant 1 to 20 miles. Not only is water an item of expense, but the available supply is limited at times, so that it is necessary to avoid all unnecessary loss and waste. Steam used for heating purposes and a portion of the exhaust from steam engines is therefore condensed and returned to feed-water tanks to be used again in the boilers. Moreover, in order to recover the water carrying the settler or mill tailings from the mill, the sluice boxes were run along a cribbed levee or embankment, thrown up across the side of the hill below the mill, so that the tailings would discharge on the upper side of the levee and spread out over the restricted area. The sluice boxes were supported on bents made by nailing a board across two other boards or slabs set upright; and as fast as the embankment was built by the deposition of tailings these bents were carried up steplike, in conformity with the natural slope of the dam. As the tailings discharge from the sluice boxes, the coarser sand naturally settles near the outside and the fines and slimes are carried back towards the side of the hill. The water, being brought practically to rest and relieved of suspended matter, is then drained off slowly into a sump at one end of the dam, whence it is pumped back to the mill to be used repeatedly until its final disappearance by evaporation and seepage.

The figures given herewith represent therefore water supplied from the main reservoir to replace the quantity lost. The volumes were all determined by the use of Worthington water meters and were afterwards reduced to a tonnage basis.

The mine and mill being supplied from the same reservoir, the proportion used by each was not determined during the later periods; it is known, however, that the total consumption at this time was greater on account of increased consumption for mining purposes. If, therefore, the figures in the second column be taken as an average it may be seen that the consumption for crushing, concentrating, amalgamating, retorting, etc., is about 1⅜ tons of water per ton of ore, and including steam for power, drying concentrates, heating amalgamating pans, etc., the consumption is less than 2 tons of water per ton of ore treated.

This does not represent the extreme to which the saving and recovery of water may be carried, but merely ordinary practice, such as is justified in this paticular locality. Naturally the quantity of water used in milling may be expected to vary with the characteristics of the ore and the fineness to which it is crushed. In this case the ore was crushed through wire screens 35 meshes to the inch; it was composed mainly of quartz, so hard that the average stamp duty was less than 2 tons per day.

Consumption of Water in Gallons per ton of Ore.

	1st period. 9 mos.	2d period. 6 mos.	3d period. 6 mos.	4th period. 6 mos.
Total for mining and milling purposes	591	522	541	625
Proportion for mining purposes	83	65	...	...
Proportion for milling purposes	508	457	...	...
Proportion for making steam at mill	...	128	127	127
Proportion for crushing, concentrating, amalgamating, etc.	...	329	...	...

A ROMAN MINE IN HUNGARY.*

By G. Von Bene.

Near a group of mountains called the Baronfels, in New Moldavia, there is an old mine, consisting of an adit-level and a shaft driven vertically from it, which is supposed to have been worked by the Romans. The writer had the opportunity of visiting it in 1896. Northward from the Baronfels, about 1,500 ft. above sea level, are a series of depressions, overgrown with trees and brushwood. From the bridle path, a short ascent leads to an artificial cutting in the limestone rock, at the end of which the mouth of an adit-level 36 ft. long and 6½ ft. wide is visible. The level inside is larger than the adit, and is 62 ft. long, 6½ ft. wide, and about 5½ ft. high. At 23 ft. a side gallery 20 ft. long opens into it, which, like the level itself, has been carefully excavated with hammer and wedge. About 3½ ft. from the floor, small niches have been cut in the walls, which were probably intended to hold little earthenware lamps for lighting the mine. This gallery terminates in a large open space where the roof is 12 to 13 ft. high, and the irregularly shaped walls denote the presence of a lode. A shaft has been sunk here, running southwest at an angle of 40° to 50°. The writer had a strong wooden beam driven into a fissure and a rope attached to it, and he and his party were lowered one by one about 16 ft. down, when a platform was reached. Magnetic iron ore and manganite were observed in the walls at this part of the shaft, and no bearings with a compass could be taken because the magnetic iron affected the needle. At the lower level brown iron ore, magnetic iron, copper pyrites and quartz were found in a granite lode about 3 ft. wide.

Proceeding down the shaft, at 60 ft. below the upper gallery, was a lower gallery, 70 ft. long, which followed the lie of a lode running northwest, in a contrary direction, therefore, to the original lode. The two lodes seem to meet here. The floor and roof of the gallery consist of a tough stone, rich in quartz, and so smooth that it was difficult to walk over the slippery surface. At one part, where the floor sounded hollow, the writer laid bare with his hammer a layer about 4 in. thick of iron ore, branching from the lode into the level. The road was blocked with tailings of quartz, granite, brown iron ore, copper and iron pyrites and calcite crystals; but in a side gallery were found traces of blasting, showing that this part of the mine must have been worked in modern times. It was observed that no water had accumulated in the workings; probably, therefore, the lowest gallery and the main shaft must originally have communicated with other deeper levels.

The writer also examined a vertical open shaft, 6½ ft. by 5½ ft., lying about 60 ft. higher than the adit. Like the rest of the workings, this shaft had been wholly cut out with hammer and wedge, was absolutely perpendicular, with clean cut right-angled corners, and was truly a marvel of handiwork.

Many years ago Roman pottery lamps were found in the upper gallery, one of which has been preserved in the Budapesth museum.

As mines in which silver ore was found were known to exist farther south a few centuries ago, the conclusion may be drawn that all the hand work which has been lavished even on the sterile rock in the open shaft, the adit, and the lower levels, is of Roman origin, and that the mine was worked to reach a lode of silver-bearing quartz ore. Operations were carried on till within modern times, but apparently the lode has long been exhausted.

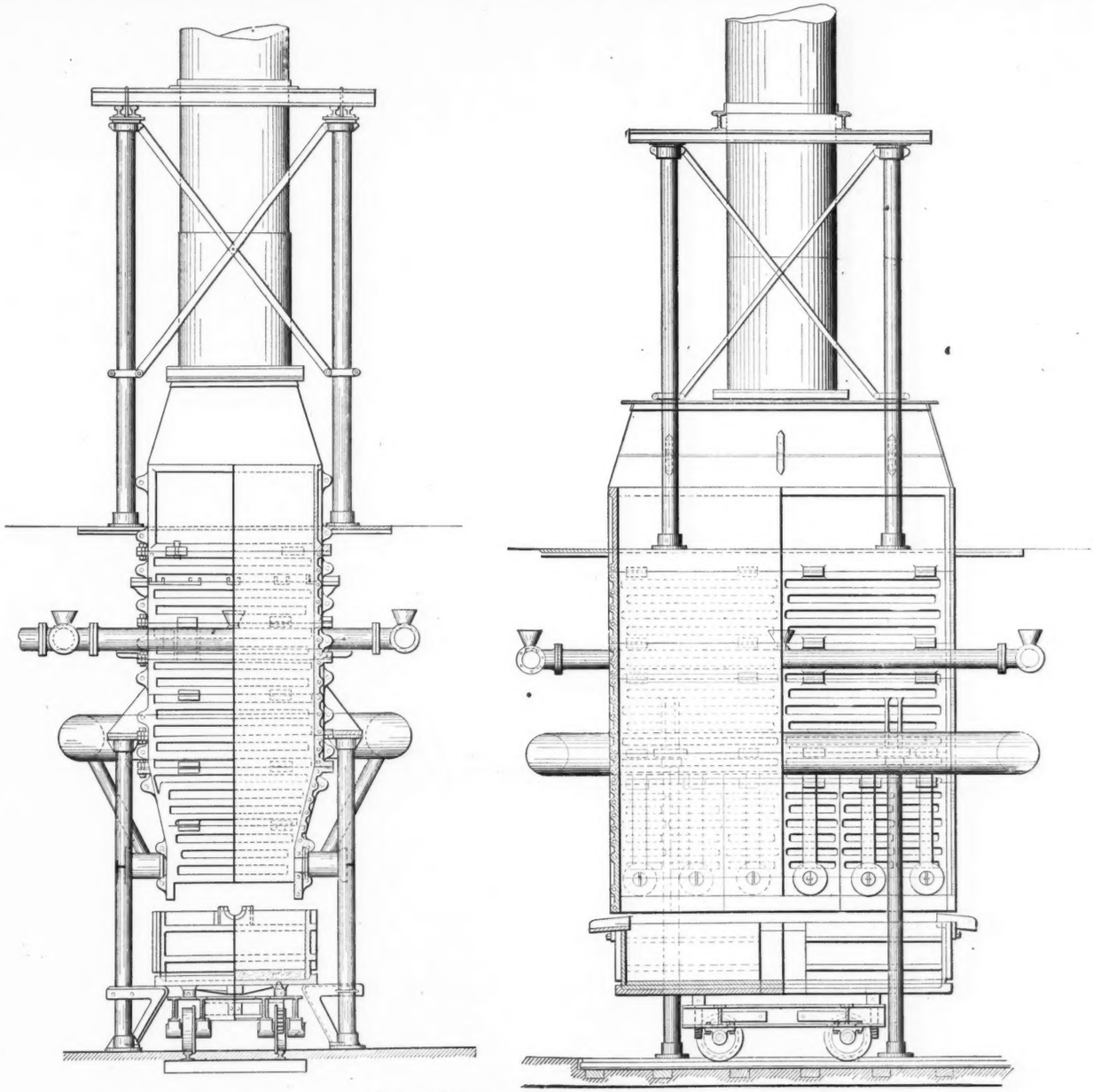
*Abstract of paper in "Oesterreiscische Zeitschrift fur Berg und Hutten wesen;" in "Transactions" of the Institution of Mining Engineers.

A FURNACE FOR SMELTING ZINCY LEAD ORES.

Written for the Engineering and Mining Journal by Ludwig Kloz.

The accompanying illustrations are drawings of a furnace designed by the writer to meet certain special conditions as described below. Figs. 1 and 2 are elevations, partly in section. They are taken from working drawings, and will fully explain the construction.

In books of metallurgy we find a good many useful and excellent sketches of lead and copper furnaces. But few show the special designs made to overcome local difficulties or those due to the character of special ores. I refer here specially to ores carrying zinc, which form crusts in the upper part of the blast-furnace to such an extent that frequent closing down is required. There are certain other ores which form crusts and speises in the crucible, so that a syphon cannot be employed. In this category belong also ores which do not carry sufficient lead to keep the metal hot in the syphon. In most cases, fortunately, only one of these troubles is experienced, but there are cases where the metallurgist has to fight both.



SMELTING FURNACE AT PLAYA BLANCA, CHILE.

The ores of the Pulaiayo Mine in Bolivia, which is smelted in Playa Blanca, near Antofagasta, have a very complicated composition. In general, they are composed of pyrites, galena, blenda, antimonite, tetrahedrite as silver-carrier, quartz as gangue. On an average they carry SiO_2 20%, Fe 20%, S 30%, Zn 18%, Pl 7%, Cu 1%, Sb 1%, small amounts of tin and arsenic, but no bismuth. Besides the sulphides there are partly oxidized ores, with 50 per cent. silica and only 5 per cent. zinc; but the quantity of these is limited. Conditions are such that the ores cannot be separted into different classes, but have to be smelted after being calcined. With the amount of zinc the rusting of the furnace stack cannot be avoided altogether, of course, but the stops for barring down have been reduced to a very short time, and in combination with a removable crucible I have found it easier to stop the furnace altogether, clean it out and start with a fresh furnace. This is done within 24 hours.

Unfortunately cast-iron jackets are of such poor qualtity as to be unserviceable in Chile. Wrought-iron jackets are very expensive, and in using a mixture of salt and fresh water, need frequent repairs. My new jackets consist of gas pipes, 1 in. diameter, of best quality, bent into a zigzag form and put into a sand mould to receive an iron casting around them. Such jackets, if properly made and of a good quality of pipe and cast-iron, are nearly unbreakable. They need less water than the ordinary water-jackets, and what is of great importance in half civilized countries, the regulation of the water is of little importance. It might happen that a jacket gets red hot, but if the full stream of water is turned on it cools down soon, without receiving injury, if the heating has not been prolonged too much.

The stack rests upon pillars and is constructed of jackets of the construction above described, but of different shape to suit the form of the furnace. These upper jackets need very little water in starting up the furnace. As soon as a crust is formed, however, they do not need any water. Above these jackets and about 8 ft. over the tuyeres, in furnaces running with a moderate blast—say 24 inches water—there are no jackets at all, but simple cast-iron plates. The tuyere jackets are fastened and suspended from the upper jackets, so that the crucible is entirely free.

The crucible consists of a cast-iron bottom-plate, 2 in. thick, with a rim, and 6 side plates; each 3 of them are lightly bolted together at the corners, leaving spaces free in the center on both long sides, in which the tap holes are located. On account of the very impure lead produced, giving only 75 per cent. Pb, the rest being SC, Cu, Sn, Zn,

the mason work of the interior of the crucible is very simple and consists of a 2-in. lining of old or common bricks, simply required to protect the plates in starting up the furnace. A crust of an antimonia speiss is rapidly formed and prevents any leakage of lead. The whole crucible construction rests upon a car with jack-screws, by means of which the crucible can be raised and lowered. After being put into its place beneath the furnace, the crucible is screwed up to its proper position and after being secured in place, the car is retired, leaving an open space under the crucible.

The mode of operation is very simple. In starting a new furnace a small fire is started in the crucible to dry it out; coke is added from above, and by introducing wind pipes through the tap holes the fire is soon glowing. Then more coke is charged till it reaches about 2 ft. over the tuyeres. A few slag charges with a good amount of bullion or litharge are thrown in and after filling up the furnace with the regular charge smelting can go on as usual. Slag and matte run through the tap-hole, to be separated by overflow pots, while from time to time the lead is tapped from the crucible. With a charge containing about 17-18 ounces of zinc, a furnace runs 2 to 3 months before the rusting has progressed so far that overfire cannot be any longer avoided. The barring down is done in the usual manner. As soon as the charge is down the car is run underneath the crucible, the latter liberated from its resting plates, lowered down by means of the screws of the car, the front packers taken out and the whole contents of the furnace wheeled out. The barring of rust in the stack begins immediately, and by cutting out first the middle of the sides the rust will slip down as a whole to the foot of the furnace, where it is cooled by water, broken into pieces and removed. A new crucible which has been kept in reserve is run into the furnace and smelting may be resumed.

ABSTRACTS OF OFFICIAL REPORTS.

Mount Morgan Gold Mining Company, Queensland.

The latest report of this company covers the year ending May 31st, 1899. The total returns were, from gold obtained, £664,143; miscellaneous sources, £1,143; total, £665,286. Payments were: Mine expenses and construction, £370,496; royalty and dividend tax, £24,805; reserve fund, £976; dividends, £350,000; total, £746,277, leaving a deficit of £80,991. Deducting £74,709 brought forward from previous year, leaves a debit balance of £6,282.

The directors' report says: "Comparing the balance with our balance last year it will be seen that the credit balance of £74,709 has turned into a debit of £6,282, showing a loss in floating balances of £80,991. But for this we can show: New mundic works, £61,867; electric light and power plant, £6,290; additions to dams, £1,010; railway line to works, £6,559; increase in value of firewood and material on hand, £7,000; a total of £82,735. The benefit to be derived from this large expenditure will appear in the coming and future years. The new mundic plant will materially increase our income. We hope to receive gold from it in August. The addition of the dams has given us 30,000,000 gallons of water more than we had. The railway siding has already materially reduced the cost of firewood and timber, and the electric light and power plant will reduce the cost of motive power and of lighting the mine."

The mine report shows 158,283 tons ore and 105,047 tons waste taken from the open cut, and 13,296 tons ore from the underground workings. The development work shows a total of 2,246 ft. drifts and cross-cuts.

Thes tatement of ores treated during the year is as follows:

	Tons.	Gold, oz.	Per ton, oz.
Oxidized ore	40,803	39,210	0.95
Low grade oxidized	130,776	52,808	0.40
Murdic..	30,069	72,224	2.41
Tailings and slimes	2,854	1,837	0.64
Totals	204,502	166,079	0.81

During the year 41½ tons of slag, ash, lead scrapings and other by-products smelted returned 1,462 oz. gold.

The interesting report of Mr. H. A. Bruce Leipner, chemist in charge of the chlorination works, says: "The large expenditure entailed in the manufacture of chlorine has led to a series of investigations being undertaken. The importance of these will be apparent by reviewing the following quantities of manganese, salt and sulphuric acid used in its production during the year. These were: Manganese, 922 tons, salt, 873 tons; sulphuric acid, 2,925 tons; the total cost of these materials being slightly over £17,000. Although this sum exceeds that of the previous year, the cost of chlorine per ton has been materially decreased, as a very much greater quantity of ore (50,000 tons more) has been treated. The manganese has generally been of a better quality than heretofore, and the sulphuric acid of a higher density. The bulk of the manganese has been obtained from the neighborhood of Gladstone, and averaged 71.24 per cent. manganese dioxide, as against 62.8 per cent. for the previous year. The salt has all been obtained from South Australia, and meets all requirements.

"As regards the supply of sulphuric acid, Mr. Mawdsley has completed the construction of the Gay Lussac and Glover towers in conjunction with the sulphuric acid plant, and they are now in full working order. These will reduce the consumption of niter and moreover produce an acid of a much greater specific gravity than heretofore. In all 768 tons of sulphur and 100 tons of niter were consumed during the year in the manufacture of this product. The supply of the former has been procured solely from Japan, and proved most satisfactory, the quality being excellent. The question of using the sulphur contained in the mundic ore referred to in the last yearly report will be considered at an early date, as the shaft furnaces at the new mundic works will be in full operation in a few days, and then the necessary analyses of the escaping gases and other determinations can be preceeded with.

"There has been a slight increase in the quantity of chlorine required for treating the low grade oxidized ores, and this has been partly due to the presence of a very small percentage of mundic. The quantity used for the higher grade oxidized stone remains about the same. But the mundic ore shows a decided decrease amounting to 11 per cent. less consumption of chlorine; this may be considered very satisfactory, especially as the percentage extraction of gold gives a slightly higher return on all grades. As the consumption of chlorine is to a great extent dependent on the sweetness of roast, numerous analyses of both the roasted and unroasted mundic ores have been made, the results proving the very much greater efficiency of the shaft furnaces over that of the reverberatories, which, in the first place, were not designed for calcining the sulphide ores, and as a consequence have to be pushed in order to maintain the output; the increased efficiency being both in the roasting and the cost of same."

THE MINING MACHINERY EXPORT TRADE OF GREAT BRITAIN.—The month of July proved to be a very active one as regards the exports of mining machinery from this country, the value of the shipments being £71,877, which compares with only £58,602 in the preceding month, and £63,838 in July, 1898. The returns for the seven months ending with July also compare most favorably with those for the same period of 1898, the total being £442,654, as against £397,034, or an increase of £45,620. Glancing at the details of the returns they show that the exports to the Continent and Australia have diminished, but on the other hand there has been a large increase in the shipments to South America, the East Indies and South Africa, the increase for the seven months in the case of the last named market being no less than £55,408.

COAL ON THE UPPER ZAMBESI.—The British Acting Vice-Consul in his report on the trade, commerce and navigation of the port of Chinde for the year 1898, states that although the improvement of the trade of the port has been well maintained, the expected increase of business, consequent upon the discovery of coal on the Upper Zambesi, has not been realized. Not more than some 1,200 tons of coal had been worked on the seam at Matinte, some eight miles from Tete, up to the end of July, 1898, under the direction of Mr. Leith, the manager of the Ocean Consolidated Company, Limited, who are the agents for the Portuguese Companhia Hulheira da Zambezia. The proportion of really good coal in this seam is not large, being only 25% of the output. So far very little of this coal has reached Chinde, and both Her Majesty's gunboats "Mosquito" and "Herald," as also the trading steamers on the Zambesi and Shire rivers, have used imported coal and patent fuel.

PRODUCTION OF COAL IN BRITISH INDIA.—According to a circular issued by the India Office there were 174 coal mines in operation in 1898, of which 158 were located in Bengal. The production in Bengal in 1898 exceeded 78 per cent. of the whole Indian production. The industry gives employment to some 63,000 persons, and the capital invested in it by joint stock companies amounts to about $383,000. There is also a large, but unknown, investment of capital by private mine owners and by the State. The value of the output in 1898, calculated at the local wholesale selling prices, may be estimated at $477,000, making an average value of about $1.04 per ton, against $416,000 ($1.02 per ton) in the preceding year. The imports of coal, coke and patent fuel in 1898-9 amounted to 359,010 tons, valued at $233,000, the average value being about $6.48 per ton, about six times the value of Indian coal. In the preceding year the imports were 262,403 tons, valued at $179,000 ($6.82 per ton). There are therefore now about 12¾ tons of Indian coal produced for every ton imported. The proportion of Indian coal grows larger each year. Indian coal is being exported in increasing quantity, though still on a small scale, to foreign countries (mainly to Colombo and Singapore), the amount exported having risen gradually to 327,104 in 1898-9. The Indian railways consume it in large and increasing quantities, the consumption in 1898 being 31 per cent. of the whole production in 1898, and the quantity of imported coal burnt by them has fallen to a low point.

MOULDED GLASS-WARE FOR INDUSTRIAL PURPOSES.—A well-known French glass expert, M. Leon Appert, says the "Imperial Institute Journal," has recently designed a glass and method of manipulating it, from which, it is claimed, vessels of large size and admirably suited for industrial purposes can be manufactured. The method is protected by two patents in the United States, and is worked by the famous St. Gobain Company, the results now obtained being so satisfactory that, at a recent meeting of the New York Section of the Society of Chemical Industry, the attention of the members was specially called to the ware, and specimens were exhibited. Briefly, the specification describes an outer mould, provided on the outside with corrugations to promote cooling, and on the inside with grooves and vents to insure the uniform distribution of the plastic glass when an inner core is applied. Means are also provided for applying heat to the lower portions of the mould. The temperature of the core itself is controlled by a fluid circulating internally. For the manufacture of vessels closed at one end, a roller traverses the upper edge of the mould to cut off the excess of glass after the passage of the core, and to shape the end of the article to the required form. Cylindrical jars up to 40 inches high and 20 inches diameter, holding 50 gals., and rectangular jars up to 16 in., by 21 in., by 22 in., holding about 24 gals., are produced by this means. Glass piping, which is very useful for the transfer of high tension electricity, is manufactured in lengths of 5 to 6 ft., with an inner diameter of 4 in., and up to 10 to 21 in. diameter, in lengths of at least 3 ft. The composition of the glass was not divulged, but as regards physical qualities, the surface of the glass is perfectly smooth and hard, though in the vessels is somewhat fluted on the outside, owing to the shape of the mould. It can be polished and ground to any requisite degree, and drilled with holes of any required size in any part, and is unacted on by boiling water. The glass can be held directly in the hottest part of the blast-lamp, where it slowly softens, but then requires very great care if reheated. Transparent vessels of high resisting powers can, therefore, now be manufactured of very much larger sizes than was previously possible.

DUNN'S HYDRAULIC AIR COMPRESSOR.

The accompanying illustration shows a form of hydraulic air compressor recently patented (United States patent No. 630,495) by Russell L. Dunn, of San Francisco. The object of this invention is to economically and directly conserve into compressed air with a much greater economy than that obtained from hydraulic engines heretofore used the energy of a mass of water acting in a pipe under a gravity-head. Fig. 1 represents a plan view of a series or battery of compression chambers and valve operating mechanism. Fig. 2 shows a longitudinal sectional view of a single compresfion-chamber. Fig. 3 represents the motive water pipe with its supplying-reservoir, adjusting device, etc.

The apparatus is to be used in connection with a reservoir, A, Fig. 3, containing water maintained with a quiet surface at a constant level from any suitable source. B is the motive-water pipe fed from the reservoir, A, having by preference disposition in a true straight grade-line from its connection with the compression-chamber to a point not more than its entry-head below the water-surface in the reservoir, about 10 in. submergence being sufficient.

The function of the motive-water pipe, B, is the generation within it by a mass of water in the water-column acting by its velocity-head of a determinate quantity of kinetic energy. The diameter of this water-column is the same as the diameter of the inlet-valve, F, to the compression-chamber, C. The base of this water-column and lower limitation of the generation of energy in the motive-water pipe is the horizontal plane of the top of the horizontal portion of the compres-

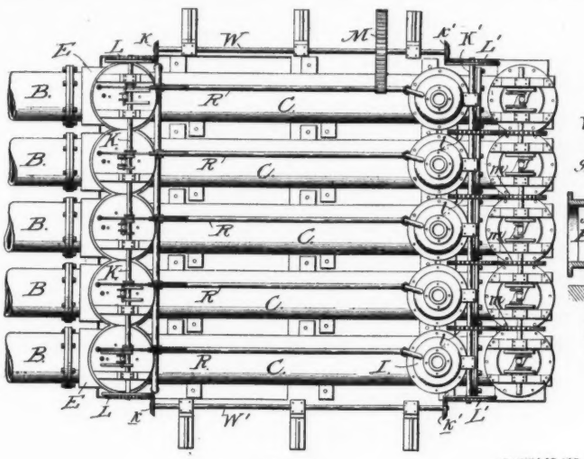


FIG. 1.

DUNN'S HYDRAULIC AIR COMPRESSOR.

sion-chamber, C. The superior limit of the column is the surface plane of the water in the reservoir end of the pipe. The motive-water pipe is the pipe containing this water-column. The determinate structural relations and disposition of the motive-water pipe to the other parts of the apparatus are its diameter equal to or slightly exceeding the diameter of the compression-chamber, C, its length such that it will contain a determinate column of water, the mass of which, acting by its velocity-head, shall generate the determinate kinetic energy required, and its preferable disposition in a straight grade-line in the vertical plane of the compression-chamber, C, and the trap, D, from the inlet-valve to a point in the reservoir and not farther below the surface of the water than the required entry-head of the water-supply.

In order to have a convenient disposition for a flow-adjusting device, the pipe is turned vertically upward in the reservoir from a point about 10 inches below the surface. Turned upward at that point the vertical portion, B^2, of the pipe should be extended a few inches above the quiet surface of the reservoir water. b' b' are slots made in the pipe extending from the water-surface to the depth of the turn, said slots being of uniform width and uniformly spaced to admit water from the reservoir, A. Around the slotted end of the pipe, B, 2 rings, 8, 8, are placed one above and the other below the slots, b' b'. The rings, 8, 8, are cut away at 10 to form annular slots or guides, and in these slide shutters 12 of uniform width designed to close the water entirely out of the pipe, B, when desired and to adjust the rate of the flow of the water into said pipe when necessary.

C, Fig. 2, is a compression-chamber of the same or slightly less diameter than the motive-water pipe, B, into which enter alternately free air to be compressed and the volume of water from the motive-water pipe, B, which displaces it after compression. The chamber, C, is disposed horizontally in order to get greater economy of the applied force. It is constructed with a vertical portion, I, into which the compresed air collects and from which it is forced out through the air-valve, h, into any suitable receiver. This vertical portion, I is near the end of the chamber, C, and is structurally of such dimensions that with substantially the same diameter as the horizontal part of C its cubic capacity shall be about that of the volume of air when compressed to the required tension. The object of this structure is to avoid possible losses after compression by reason of inclosure of air in the water at points in an all horizontally-disposed chamber that the movement of the water would not get to the air-outlet valve before it closed from the cessation of the forward motion of the water.

The compression-chamber, C, at its outlet end terminates in a casing, J, in which the cylindrical valve, H' operates vertically. H' is a hollow cylindrical valve, the details of which are shown in Fig. 3. This valve is surrounded by a chamber, i, in the casing, J, and is thus balanced against the pressure of the water which surrounds it on every side and is kept firmly to its seat by a spring. A downward opening in the valve-casing, J, under the valve, H', when the latter is open permits the water in the compression-chamber to be discharged or wasted and the free air to enter in its place, this valve having thereby a dual function. D is a water-trap which is designed to remain filled with water during the operation of the machine, its function being a dual one—first, to prevent the backflow of air when it is being compressed, and, second, to form a seal between the inlet-valve, F, and the compression-chamber, C, so that when the inlet-valve is opened the water shall move forward as a piston instead of as a spray.

When compressing to a high degree of compression, it is proposed to inject a water-spray into the compressed air.

The operation of the apparatus is substantially as follows: The trap, D, and the motive-water pipe, B, being filled with water and the compression-chamber, C, containing free air, the waste-valve, H' being seated and the air-valve, h, being also closed, the movement of the secondary engine is commenced to operate the cams on the shaft, K. The cams engage the pin, O, and lift the valve-stem, G, of the inlet-valve, F, and thus open this valve. The mass of water in the motive-water pipe is thus released and free to act and immediately moves with the initial velocity determined by its velocity-head, thereby developing its entire kinetic energy, and there being no dead-space it gives this motion and energy instantly to the water in the trap, D, the whole mass then moving toward and commencing to enter the compression-chamber, C, opposed only by the initial resistance of the air at atmospheric tension in C. As the forward movement continues the resist-

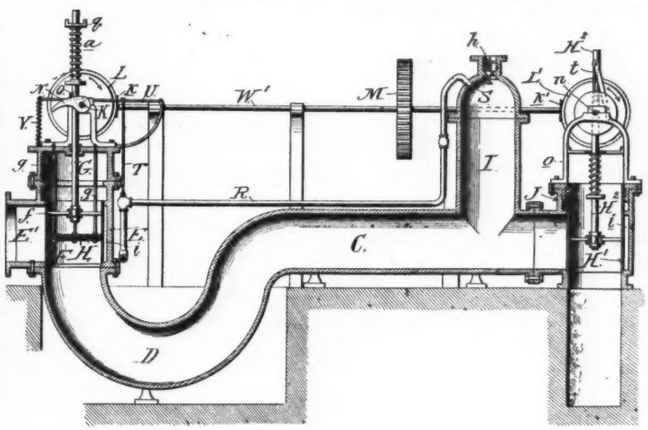


FIG. 2.

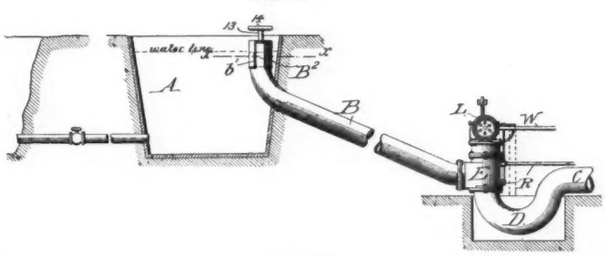


FIG. 3.

ance of the air increases by its compression and correspondingly the mass of water in the motive-water pipe loses its initial velocity, having transferred kinetic energy to the air. The air as compression proceeds is presed out of the horizontal portion of the compression-chamber into the vertical portion, I, and when compressed substantially to the predetermined degree of tension the air-valve, h, opens and the compressed air passes through it into the receiver. The mass of water moving into the vertical portion, I, has continued to lose its initial velocity and to use up its kinetic energy until at the completion of the air expulsion it has lost all of its velocity and kinetic energy. At this instant the air-valve, h, is closed by the back pressure of the air from the receiver. The inlet-valve, F, which has previously been released by the cams passing from under the pins, O, and impelled in the reverse direction toward its seat by the spring, A, is seated, and sucessively to the seating of this inlet-valve the secondary engine, continuing to work the shafts, n, revolving the disks, r, raises the links, t, and by them the pin, u, in the slot, w, in the valve-stem, H^2, until at this successive instant the pin, u, engages the upper end of the slot, w, and lifts with it the valve-stem, H^2, and the waste-valve, H'. Out of this waste-valve the water in the compression-chamber empties, and its place in the compression-chamber is taken by free air. The continued operation of the secondary engine seats the waste-valve, H', the instant the water is fully discharged at that same instant has so far revolved the cams, N, N, that in the next successive instant they shall engage the pin, O, thus restoring that initial condition described, from which the operation is repeated.

ANTHRACITE IN POLAND.—A deposit of anthracite has lately been discovered at Polaniec in the Radow Government of Poland. Arrangements are in hand for the sinking of a shaft to work the deposit.

QUESTIONS AND ANSWERS.

(Queries addressed to this department should relate to matters within the special province of this periodical, such as mining, metallurgy, chemistry, geology, mineralogy, machinery, supplies, etc. As it is manifestly impossible to devote space to all the questions and notes constantly received, preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot here undertake to give professional advice on problems requiring special investigation and which should be obtained from a consulting expert. Nor can we undertake to give advice about mining companies or mining stocks. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers should send their names and addresses. Anonymous questions will not be answered. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

Tungsten.—What is the price of wolfram; what are its uses; where is there a market for the ore, and where is it produced in the United States?—E. R.

Answer.—We have received a number of inquiries regarding tungsten recently. A full account of its uses, occurrence of its ores, etc., may be found in Vols. II and VII of the "Mineral Industry." Briefly, we will say that tungsten is used chiefly to make ferro-tungsten for the manufacture of tungsten steel. One of the salts, calcium tungstate, from its fluorescence, is used in Roentgen ray apparatus. The manufacturers of ferro-tungsten in the United States are the Chrome Steel Company of Brooklyn, N. Y., Stein & Boericke of Philadelphia, and Ash & Deninger of Phoenixville, Pa. The production of ore in this country last year was 78.8 long tons.

There is also a market abroad, but any considerable increase in the amount of ore offered would undoubtedly lower prices decidedly. The value of tungsten ore is determined by the percentage of tungstic acid and the freedom from sulphur and phosphorus, so varies widely, while the price fluctuates according to demand. The ore is found in Arizona, New Mexico, Colorado, South Dakota, Nevada and Connecticut.

Gold Placer Mining and Machinery.—Kindly inform me where or how I can locate gold-bearing sands in the West? I understand there are tracts of such sands in Idaho. I understand also that there has been a process invented and tried lately in New York to save gold from such sands at small cost. Can you tell me anything about it?—T. J. C.

Answer.—The only method of finding gold-bearing sands in Idaho or elswhere in the West is to search for them as other prospetcors do; but first it would be well for you to acquire some practical knowledge of the subject, which you do not now seem to possess. Prospecting is not easy work by any means and most successful prospectors have served a long apprenticeship and have suffered many hardships and disappointments before they began to meet with any success. We do not wish to discourage anyone from going into the mining business; but he should first consider well what his qualifications are. A man can no more find gold off-hand, without previous knowledge or experience than he can build a house or a steam engine.

As to the process you refer to, there are so many new and fake processes brought forward that it is impossible to tell which is meant. Generally speaking, it is safe to look carefully at all new processes, especially at those which claim to be very cheap and easy.

Gas or Oil Engines at Mines.—We have been urged to adopt the gas or oil engine for furnishing power for hoist, air compressor, etc., at mine, and for running a 10-stamp mill. Are such engines reliable? Are they used anywhere at mines to any considerable extent? We may add that wagon transportation for about 50 miles is required; that coal is costly and the supply of wood accessible is small. The water used is that pumped from the mine itself.—J. D. R.

Answer.—On your statement of the facts your mine ought to be an excellent place for the use of gas or oil engines. In your locality you ought to be able to get oil at a low price. Its transportation by wagon would cost much less than coal, taking equal efficiency. Gas or oil engines have been now so far tested and improved that they can be considered quite as reliable as steam engines. Apart from fuel considerations, the first cost of the installation would be less, as you would save the cost and transportation of boilers, which would be a considerable item. The gas engine also requires only a very small water supply. You do not state the quantity of water which is pumped from your mine, but unless it is a very wet one there would probably be a short supply for the steam boilers which you would need. Further, mine water is very apt to contain matters which would be injurious to boilers either by causing corrosion, or by making sediment and incrustations. The gas engine needs only water enough to cool the cylinder, and the quality of this makes little or no difference.

Gas engines are now in use for hoisting, pumping, etc., at a number of mines, especially in Arizona and Mexico, where fuel and water are not abundant. A report of the Arizona Copper Company at Clifton, made about a year ago, attributed the success of the company's plant under adverse circumstances to the use of gas engines, among other things. You should certainly consider the use of the gas engine very carefully.

LOCATING MANUFACTURING PLANTS.—The Baltimore & Ohio has taken a new step in the appointment of W. W. Wood, with headquarters at Baltimore, as Industrial Agent. Mr. Wood's duties will be to advise manufacturers and others as to desirable locations for their plants, and to give information in detail as to the peculiar advantages of territory adjacent to the company's lines. It is believed that this will do much to develop the resources of the territory.

PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending August 15th, 1899.

630,842. PROCESS OF SEPARATING PRECIOUS METALS FROM ORES. William H. Baker, Deadwood, S. D., assignor of one-half to Alvin Clark, Devils Lake, N. D. The process consists in first pulverizing the ores, then subjecting the same to agitation and to a bath of boiling cyanide of potassium solution, keeping the solution of uniform strength during the treatment, separating the solution from the ore, and subsequently evaporating the same and calcining the residue to recover the metal.

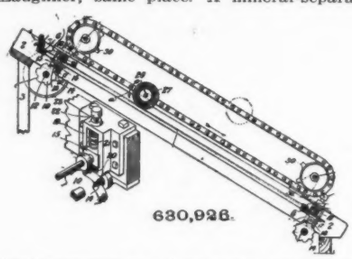
630,867. MANUFACTURE OF PLANISHED IRON AND STEEL. Wallace C. Dickey, Pittsburg, Pa. The improvement consists first in annealing the sheets in the usual manner, second, subjecting the sheets to the steam-bluing process to form a ferrous-oxide coating; third, coating such sheets by applying a mixture of graphite and the oxide of salts of tin or lead, or both, and fourth, planishing said sheets by hammering or passing through rolls.

630,885. GAS-PRODUCER FOR METALLURGICAL PLANTS. Edward C. Hegeler, La Salle, Ill. The combination with a combustion-chamber of a gas-producer, a gas-flue leading directly from the producer to the combustion-chamber, and a blower in the gas-flue directly intermediate the combustion-chamber and producer, whereby an equilibrium of pressure of the gas in the producer with the outer atmosphere may be produced at the stoking-opening while the plant is in operation, and the gas, as produced, may be delivered directly into the combustion-chamber under pressure.

630,893. HYDROCARBON-BURNER. John J. Jordan and Charles Thiele, Kyle, Tex. A hydrocarbon-burner consisting of a casing provided with a longitudinal partition which subdivides the casing into compartments and is provided with a series of ports, a series of jet-pipes and means for supplying fuel.

630,897. APPARATUS FOR REMOVING GRAPHITE CRUSTS FROM INTERIORS OF GAS-RETORTS. Alphons Kerris, Godesberg, Germany. The combination, with an outer tube, of an inner tube; a collar having a fluid connection with the inner tube; a pipe extending from said collar; a gland at one end of the outer tube, pivoted bolts passing through a flange on the gland; and an outlet-pipe connected with the outer tube.

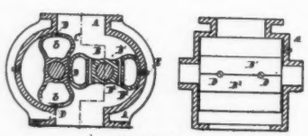
630,926. MINERAL-SEPARATOR. William E. Porter and Wilbur R. McKelvy, Shousetown, Pa., assignors of part to T. C. O'Donovan and E. E. Laughner, same place. A mineral-separator comprising a



630,926.

supporting-framework set at an angle, cross-shafts mounted therein, cams secured on said shafts, a screen mounted on cross-shafts having sliding bearings in the frame provided with elastic cushions, and rollers on the cross-shafts adapted to be engaged by the cams.

630,932. ROTARY PUMP. Adolphe Rock, San Francisco, Cal. The matched impellers, B, C, having their wings slitted longitudinally and elas-



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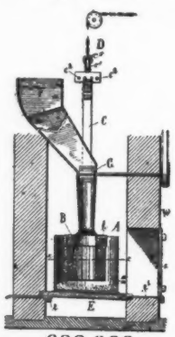


630,966.

tically expansible, in combination with means for effecting such expansion to various degrees at either end at will.

630,966. CARBIDE-FURNACE. Ludwig K. Bohm, New York, N. Y., assignor to the Electro Gas Company, of West Virginia. The combination of an upper carbon electrode, a tank or receptacle forming the lower electrode, a ribbed supporting-plate for said tank to which the current-supply cables are connected, and a carbide coating or covering for said tank or receptacle.

630,951. WET PROCESS OF EXTRACTING SILVER FROM ITS HALOID SALTS. Ludwig Vanino, Munich, Germany. The process consists in mixing said haloid salts with a watery solution of alkaline agents, and adding formic aldehyde in the cold.

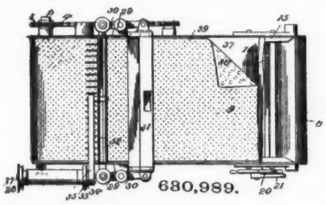
630,971. SLUICE, RUNWAY, OR FLUME. Prescott S. Buckminster, San Francisco, Cal. The combination with a continuous sluice, runway or flume having a portion of its bottom removed, of a receiving or settling chamber arranged below said sluice, a series of pieces arranged transversely of said settling chamber below the level of the sluice-bottom for checking the current and preventing an un-

dercurrent, and a gate-controlled discharge-opening for said chamber.

630,977. ROTARY RECIPROCATING PUMPING APPARATUS. Victor E. Emgarth, Philadelphia, Pa. A cylinder provided at each end with an inlet and an outlet opening, a casing surrounding said cylinder and forming water inlet and outlet boxes adjacent to the inlet and outlet openings at each end of the cylinder, a driving-shaft traversing the cylinder, disk-shaped valves secured to the shaft and rotating within the cylinder at either end.

630,982. PROCESS OF RECOVERING GOLD FROM PULP, SLIMES, OR SIMILAR SUBSTANCES. William Kemmis-Betty and Barry Searle, near Johannesburg, South African Republic. The process consists of the following steps: first, dipping zinc shavings in a solution of a salt of lead; second, adding a stronger solution of cyanide of potassium to the gold-bearing solution; third, filtering the resultant solution through the body of zinc shavings so prejared.

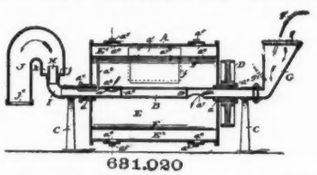
630,989. CONCENTRATOR. Charles L. Rose and William P. Hyatt, Ophir, Colo., assignors of one-third to Charles W. Tremain, Chicago, Ill.



630,989.

The combination in a concentrator of an endless apron with sand and water distributors, a mechanism for giving the same a lateral reciprocating movement in opposite directions.

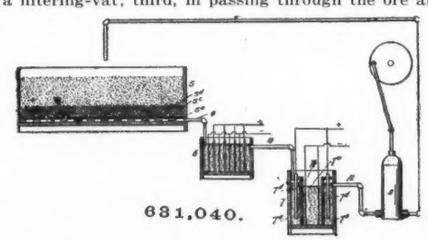
631,020. APPARATUS FOR WASHING PLACER SOIL. Samuel W. Lissan, Philadelphia, Pa. In combination, a revoluble drum, a cylindric screen mounted on said drum, a hollow shaft upon which said drum is mounted, a plug or stoppage in the central portion of said shaft,



631,020

openings in said shaft one on each side of said stoppage, a hopper the discharge end of which leads into said axle, and an air vent pipe one end of which opens within the cylinder, the other end outside the cylinder and the intermediate portion of which is within the hollow axle.

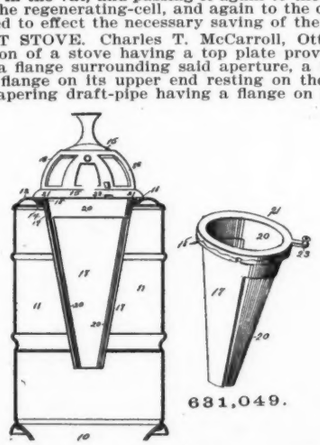
631,040. PROCESS OF EXTRACTING PRECIOUS METALS FROM THEIR ORES. John E. Greenawalt, Denver, Colo., assignor of one-half to William Robinson, same place. A process which consists, first, in properly roasting the pulverized ore; second, in placing the ore in a filtering-vat; third, in passing through the ore an electrolyzed



631,040.

solution consisting of a solution of chlorides, chiefly sodium and ferric chlorides, and small quantities of chloride and hypochlorous acid, with such other compounds as result from the electrolysis of chloride solution; fourth, passing the solution after it leaves the ore through a precipitating-tank; fifth, passing the solution after it leaves the precipitating-tank, through the positive or anode compartment of an electrolytic cell keeping the solution separate and distinct from the solution in the negative or cathode compartment in the cell; sixth, returning the solution from the regenerating-cell to the ore in the vat, and passing it again to the precipitating-tank, again to the regenerating-cell, and again to the ore as often as may be required to effect the necessary saving of the values.

631,049. HOT-BLAST STOVE. Charles T. McCarroll, Ottumwa, Iowa. The combination of a stove having a top plate provided with an aperture and a flange surrounding said aperture, a tapering draft-pipe having a flange on its upper end resting on the flange of the top plate, a tapering draft-pipe having a flange on its upper end rest-

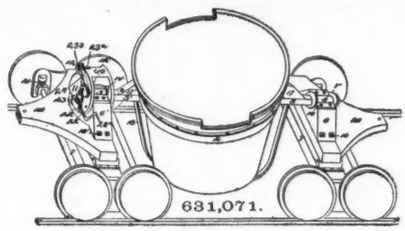


631,049.

ing on the flange of the first pipe, the contacting faces of the flanges on the pipes being undulated and portions of both draft-pipes being cut away to provide a fuel-opening, means for retaining the outer pipe against rotation and means, arranged for manual actuation, for rotating the inner pipe, together with means for controlling the flow of air through said pipe.

631,002. CARBURETER. Adolphe I. van Vriesland, Amsterdam, Netherlands. The combination with a cylinder divided by a partition into two chambers of a rotary drum, a series of conduits opening at one end into the drum-chamber, a box arranged at the end of the drum into which open the other ends of the conduits, and partitions in said box dividing the same into compartments which open directly into the second chamber.

631,071. CINDER DUMPING CAR. John J. Gorman, Braddock, Pa. The combination with a pair of axle-trucks and the bolsters pivotally mounted thereon, of a platform mounted on each of said bolsters, pillow-blocks mounted upon said platforms, a pot or kettle, and a circular support to receive the same, a pair of shafts formed integral with said support at opposite sides thereof, and journaled in



631,071.

said pillow-blocks, spur-gears mounted on one of said shafts, separate gearing for operating said gearing on the shaft for overturning the pot or kettle, a pair of yokes secured to the front pillow-block, and a lock secured to said front pillow-block and engaging the operating-gearing.

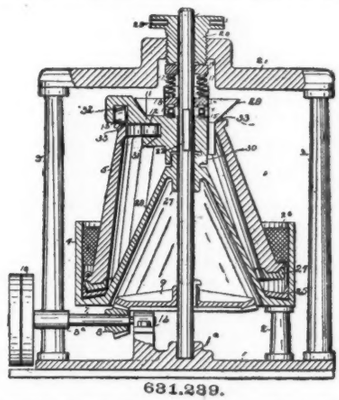
631,084. MACHINE FOR LIFTING AND CONVEYING STRAIGHTENED BARS. Richrad W. Lundy, South Bend, Ind. The combination of a straightening apparatus, a movable conveyor provided with a series of projecting fingers, said conveyor located adjacent to the straightening apparatus so as to adapt the projecting fingers to engage a straightened bar.

631,177. JAR FOR WELL-DRILLING TOOLS. Harry W. Rank, McDonald, Pa. A jar consisting of interlocked links each of which is formed of a solid integral piece of highly-tempered material, the side pieces or reins of said links having their temper let down slightly, whereby the knocking-heads are left very hard to withstand the battering and the said reins are toughened to withstand the tensile strain.

631,181. PROCESS OF MAKING SUPERPHOSPHATES. Georg Schuler, Stettin, Germany. The process consists in leaching mineral superphosphate and concentrating the lye by evaporation to a specific gravity of at least about 1.21, thereby precipitating gypsum, separating the precipitate from the remaining product, which is a mixture of mono-calcium phosphate and phosphoric acid, adding to the product comminuted phosphate and heating the mixture to a temperature of about 110° C.

631,191. STORAGE-BATTERY CELL. Axel K. Westerdahl, New York, N. Y. A battery-cell cover comprising an elastic or yielding marginal portion having openings admitting the battery-element studs or projections and also having a central opening, and a harder interior portion adapted to forcibly enter said central opening and expand the marginal portion by direct lateral pressure to the cell-walls and element studs.

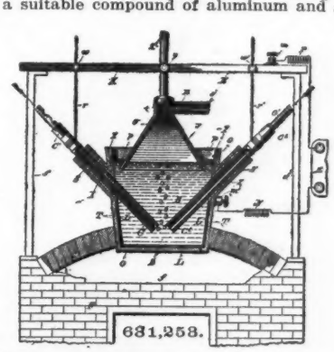
631,239. ORE PULVERIZER. Harry W. Williamson, Denver, Colo. In combination with a pan and a grinding-mullier operating therein, a shaft extended from the bottom to the top of the machine, a pres-



631,239.

sure-head attached to the said shaft and rotating therewith; horizontal and vertical rollers arranged to give the muller a gyral motion, and springs bearing vertically on the pressure-head.

631,253. PROCESS OF REDUCING ALUMINUM. Frank A. Sperry, New Haven, Conn. The process consists in forming a bath by fusing together a suitable compound of aluminum and a suitable halogen



631,253.

compound of a metal more electropositive with reference to sulphur, adding to the bath a suitable compound of sulphur together with alumina, and then passing an electric current of low voltage through the fused mass, thereby electrolyzing the same.

PERSONAL.

Mr. Francis T. Freeland, of Aspen, Colo., has been visiting in Cripple Creek.

Dr. T. H. Menburgh of Oiak, Alaska, has been exploring the mouth of the Copper River.

Mr. F. R. Boocock has been elected treasurer of the H. W. Johns Manufacturing Company of New York.

Mr. F. E. Houghton of Boston, Mass., one of the directors of the Draper Mine at Soulsbyville, Cal., is inspecting the property.

Mr. G. F. Dyer, superintendent of the Draper Mine, near Soulsbyville, Cal., is in San Francisco on business connected with his company.

Mr. H. M. Moore, formerly of the Republic Iron and Steel Company, in Chicago, has accepted a position with the Atlantic Mill, at New Castle, Pa.

Mr. Nicholas Danilevski, managing director of the Pontileff Iron and Steel Works, St. Petersburg, Russia, is visiting the United States to study the principal steel plants.

Prof. Alexander Mitinski, a prominent mining engineer of St. Petersburg, Russia, is visiting the mining centers and machine shops of the eastern part of the United States.

Mr. W. H. Morgan, president of the Morgan Engineering Works of Alliance, O., has gone abroad to establish branch offices in England, Belgium, France, Germany and Russia.

Mr. R. D. Hunter, Denver, Colo., agent of the Sullivan Machinery Company, is on a tour of various mining districts including San Juan, Colorado, and the Tintic District, Utah.

Mr. Wilhelm Melzmacher, of Hamburg, Germany, chief engineer of the A. Borsing Locomotive Works, is in New York to study modern methods of manufacturing certain goods.

Mr. Paul K. Brawd, chief electrical engineer of the Russian Electric Company Union, St. Petersburg, has come to the United States to investigate electrical and mining machinery.

Messrs. Rudolf Hirsh and Theodore Stapf, of the Richard von Schoeller Company, of Hirschwang, Austria, arrived in New York recently to investigate American machinery and steel works.

Mr. John C. F. Randolph, mining engineer of New York, has just returned from Peru, Chile, where he has been for five months in the interest of the Exploration Company of London, and others.

Mr. Edgar E. Rathbone of London, who was for 2 years mining inspector for the Boer Government in the Transvaal, is now looking over mineral lands in the Boundary Creek Division of British Columbia.

Mr. C. Lepeshoff, of St. Petersburg, Russia, inspector of locomotives for the Trans-Siberian Railroad, is in Pittsburg, visiting the Pittsburg Locomotive Works and the Carnegie Steel Company and the Westinghouse Airbrake Company plants.

Mr. Russell T. Mason, for over 2 years past mining engineer with the Boston & Montana Mining Company at Butte, Mont., has accepted a position with the Copper Range Mining Company under Dr. L. L. Hubbard, with headquarters at Houghton, Mich.

Mr. W. A. Prichard, a graduate of Stanford University, has been appointed manager of the Keystone Consolidated Mines at Amador City, Cal. This property is one of the largest gold producers on the Mother Lode, its total production to date having passed the $15,000,000 mark.

We want the present address of a certain J. H. Smith, who we believe was also known under the name of Geo. Ryall, of Kalispell, Montana. Said Smith went to the Klondike in 1897 and 1898, and left Dawson last December. Readers who know of his present address will confer a favor by sending it to this office.

Mr. C. W. Kempton has returned from Honduras, Central America, where for 2 years he was mining engineer and metallurgist for the New York & Honduras Rossario Mining Company at San Juancito, and has opened an office as mining engineer in the Columbia Building, New York City.

OBITUARY.

Archie L. Means, a well known ore buyer of Joplin, Mo., died recently at Colorado Springs, Colo. He was a chemist and assayer, and purchased zinc ore for the Illinois Zinc Company. He came to Joplin from Peru, Ill., about 9 years ago.

Robert Ramsay died recently at Kilbride, Scotland. He was constructing engineer of the H. C. Frick Coke Company, and superintendent of the Standard Coke Works, at Mount Pleasant, Pa. He was born 58 years ago and came to this country from Scotland at an early age.

Baron Albert Grant, the promoter of the Companies' boom of 1870, whose financial collapse in 1879 caused a profound sensation, died in London August 30th. His real name was Gottheimer, and he began business as a wine merchant, but in 1865 became manager of a London money company that had a short and sensational existence. About 1870 he became a power on the London Exchange and had a hand in some dubious but profitable undertakings. One was in the Mineral Hills mine, in Nevada. This was originally a paying concern, and practically no one of the English investors knew the property was worked out. The mines were flooded—accidentally, it was alleged—soon after the transfer, and debentures once worth $500 became unsaleable. Then came the Emma mine affair. Experts declared the silver mine, which was in Colorado, was very rich, and a company with £1,000,000 capital was floated. Three members of Parliament and Robert Cumming Schenck, United States Minister to Great Britain, were among the directors. The prospectus declared that a dividend of 80% was possible, but the mine proved to be worthless. It was afterward stated that Park and Stewart paid Grant for it £100,000 promoting money. Schenck resigned his diplomatic post because of the scandal. English mines then became the rage, and the market was deluged. Next the loan mania was fanned into being. Honduras and Paraguay served as baits. The loan mania finally disappeared, and with it many fortunes. Railways were boomed, and with great success for a time. Finally they collapsed with the rest. Grant Brothers & Company filed a petition in bankruptcy in 1879, with liabilities of £681,993.

Sir Edward Frankland died August 16th in Norway, aged 74 years. He was born at Churchtown, near Lancaster, Eng., January 18th, 1825, and studied at the Royal School of Mines, and at the Universities of Marburg and Giessen, at the former of which he graduated as Doctor in Philosophy. He was appointed in 1849 Professor of Chemistry at the College of Civil Engineers at Putney; and, in 1851, to a similar post at the Owens College, Manchester. Upon the retirement of Professor A. W. Von Hofmann in 1865, he succeeded to the Chair of Chemistry in the Royal College of Chemistry, and the Royal School of Mines, now amalgamated and known as the Royal College of Science. Dr. Frankland wrote numerous articles, of which the "Isolation of the Radicals of Organic Chemistry," the "Organo-metallic Bodies," "Cacodyl," "Organoboron and Silicon Compounds," the "Theory of Types," a "New System of Notation," are, perhaps, the most important. He was an authority on sanitary matters, and was specially distinguished as a water analyst, being the author of many of the processes in constant use. In 1868 he was appointed a member of the Royal Commission for Inquiring into the Pollution of Rivers in Great Britain, which lasted over 6 years, the report occupying as many large volumes. The information brought together by him was of the highest value. He also for many years held the position of Government Analyst of the Metropolitan Water Supply in London. He was the author, with Dr. F. R. Tapp, of a text-book on chemistry, which was an expansion of his "Lecture Notes for Chemical Students," published in 1876, and of a small but very useful book on water analysis. Dr. Frankland was associated with many scientific societies, He received a royal medal in 1857, and the Copley medal in 1894. He was president of the Institute of Chemistry and of the Chemical Society. He held honorary degrees from Oxford and Edinburgh Universities, McGill University, Canada, and Würzburg; in 1895, he was elected one of the 8 foreign associates of the French Academy of Science, and in 1897 received the distinction of a Knight Commandership of the Bath.

SOCIETIES AND TECHNICAL SCHOOLS

North of England Institute of Mining and Mechanical Engineers.—The annual meeting was held at the Wood Memorial Hall, August 5th. The annual report of the council stated that the honorary members were 29; members, 870; associate members, 126; associates, 109; students, 62; subscribers, 23; total, 1,219, as against 1,180 last year. The alterations and additions to the Wood Memorial Hall had been completed for about £2,200, a sum somewhat in excess of the estimated cost. The library now contained about 7,999 volumes, and 2,000 unbound pamphlets. The finance committee reported that the ordinary expenditure amounted to £2,210 16s., leaving a balance of ordinary receipts over ordinary expenditure of £368 7s. There was also paid on account of the alterations to the Wood Memorial Hall £1,900 12s., the total payments thus amounting to £4,111 9s. The balance sheet showed the capital of the Institute at June 30th, 1899, to be £8,145 15s., but this did not include either the original value of the Wood Memorial Hall or the amount recently expended in its alteration.

The following elections took place: President, Mr. W. Armstrong; vice-presidents, Messrs. T. Forster Brown, J. L. Hedley, J. H. Merivale, U. W. Parrington, J. G. Weeks, and W. O. Wood. Council: Messrs. H. Aytoun, H. Armstrong, R. Donald Bain, G. Fred. Bell, T. E. Forster, T. E. Jobling, Philip Kirkup, A. C. Kayll, H. Lawrence, H. Louis, J. H. Merivale, H. Palmer, J. Morison, R. E. Ornsby, J. A. Ramsay, F. R. Simpson, J. Simpson, and C. Berkley.

Papers were read on the "Kalgoorlie Goldfield," by J. S. Becher, and the "Mineral Resources of Tasmania," by John S. Sandman.

INDUSTRIAL NOTES.

Messrs. F. J. Burch & Company, of Pueblo, Colo., have recently taken an order for 70,000 ore sacks for a Leadville firm.

It is stated that the Egyptian State Railroad is to place an order for 400 gondola cars with the Pressed Steel Car Company of Pittsburg, Pa.

The Union Metallic Cartridge Company, at Bridgeport, Conn., has placed an order with the Berlin Iron Bridge Company of East Berlin, Conn., for an extension to a 3-story factory building.

The Bonnot Company, Canton, Ohio, recently received an order for some Portland cement machinery to be shipped to England. The company has the contract for the cement machinery for the Omega Portland Cement Company of Jonesville, Mich.

The Barr Pumping Engine Company, of Philadelphia, has just completed the test of a 10,000,000-gal. vertical triple expansion crank and flywheel pumping engine at Kansas City, Mo., which largely exceeded the guarantee, earning a bonus for the builders.

A firm of Philadelphia bankers has purchased the plant of the American Cement Company at Egypt, Pa. The price paid is said to have been $2,500,000. The plant consists of 4 mills, whose daily output is 4,000 bbls. It is not known for whom the plant was purchased.

The Russian Hartman Engineering Company, of Longavask, South Russia, recently imported considerable American machine tools and manufactured iron and steel. A representative is to be sent to America to obtain the agencies of our manufacturers in Russia.

The Dubuque (Iowa) Ore Concentrating Company is to be incorporated by Assistant State Geologist H. Foster Bain, and others, of Des Moines, Iowa. The capital stock will be $5,000. All the machinery to be used by the company has been purchased, and work is to begin early in October.

The Jeffrey Manufacturing Company of Columbus, O., through its Denver branch, has secured a contract for an electric haulage plant from the Colorado Fuel and Iron Company, consisting of two 200 H.P. automatic engines, two 120-K.W. generators and four 10-ton locomotives, to be installed at the Starkville, Colo., mines.

The Stilwell-Bierce & Smith-Vaile Company of Dayton, O., announces that it has established a branch office at St. Louis, Mo., in the Burlington Building, with Mr. Louis Bendit as manager. The St. Louis branch will carry in stock air compressors, pumps for all pumposes, condensers, filter presses, Victor turbine water wheels and refrigerating machinery.

The Mexican Clay Manufacturing Company, of Mexico, has gone into liquidation, causing a loss it is said of $500,000 to Ohio people. The company was organized about 2 years ago. George T. Whitmore, of Akron, O., was general manager. He returned from Mexico, recently, and says that the Mexican clay cannot be used for sewer pipe as it melts when subjected to severe heat.

At the Colorado-Philadelphia Reduction Works at Colorado City, Colo., orders have been placed for new Holthoff-Weathey furnaces and necessary machinery to bring the capacity of the plant up to over 400 tons per day. A new Allis-Corliss engine is in place, and 20 new Wilfley tables are to be installed, together with new boilers, to enable the concentrating plant to handle the entire tonnage of tailings after chlorination.

The C. W. Hunt Company of New York is engaged on a Danish contract for coal handling machinery, including steam shovels, engines, conveyors and automatic railways. The steam shovels will each have a capacity of 3 tons per trip or 7,000 tons per day. The machinery will cost approximately $80,000, and will be erected at Copenhagen. Other foreign orders recently taken include coal hauling machinery for the Allgemeine Electricitaets Gesellschaft, of Berlin.

A big deal in vessel property was closed at Cleveland, Ohio, August 26th. The steamer "Appomattox" and consort "Santiago" were sold by Capt. James Davidson, of Bay City, Mich., to the Boston Coal, Dock and Wharf Company, of

which M. Monsairrat is president. The transfer price was reported at $230,000. The combined capacity of these vessels is 8,000 tons. The coal company is backed by the J. P. Morgan syndicate, which owns coal land in the Jackson district of Southern Ohio.

The Edward P. Allis Company, of Milwaukee, Wis., has recently taken orders for a reversing mill engine for the American Steel and Wire Company, at the Worcester, Mass., plant. This engine has 2 steam cylinders 44 in. diameter by 60 in. stroke attached to the same crank pin, 22 in. in diameter. The company has also an order for one tandem compound condensing finishing mill engine from the Pennsylvania Steel Company, at Steelton, Pa. The company has been awarded a contract for 5 vertical blowing engines, aggregating 500 H. P., for the Dominion Steel Company's blast furnaces now under construction at Cape Breton, Canada, and has also taken the contract for engines to supply electrical power for the Glasgow, Scotland, Tramway. The contract price of which was £114,544.

Rogers, Brown & Company and Eugene Zimmerman of Cincinnati will, it is said, consolidate the Cherokee Iron Company, possessing a blast furnace at Cherokee, Ga., and the Augusta Mining Company, owning a series of brown ore properties in Polk County, Ga., and in the adjacent part of Alabama, including what is known as the Frog Mountain ore property. There are 4 shipping mines on the land of the Augusta Mining property with a good deal of mineral area which is to be developed. It is probable that the new concern will be called the Georgia & Alabama Iron Company, and that it will be capitalized at $650,000 each of common and 7% cumulative preferred stock. Mr. Zimmerman controls the Talladega furnace property and the Broken Arrow coal property. This, while not a part of the consolidation, will supply the necessary coal for the coke ovens which are to be built at the Cherokee Furnace.

The Lidgerwood Manufacturing Company of New York has constructed a special form of cableway adapted for coaling vessels at sea. The United States Navy Department has contracted with the Lidgerwood Company to equip the collier "Marcellus" with one of these sea coaling cableways, and a board of naval officers will try the device at sea. The work of the installation will be under the direction of Naval Constructor Bowles. In this device, the warship may take the collier in tow, or the collier may take the warship in tow, leaving a space between the ships of 300 ft. Elevated cables from the masthead of the collier to shear poles on the warship serve to support a carriage, from which hangs bags of coal. The coal is elevated from the collier, transferred to the carriage at the masthead, and propelled across the intervening space at a speed of 1,000 ft. per minute. The arrangement for compensating for the lurching of the vessels in seaway has been tested on a small scale with satisfactory results. Coaling can be carried on while the ships are moving ahead.

TRADE CATALOGUES.

A price list of the improved Le Grand coal and rock drills, many of which are stated to be used in the anthracite mines of the Schulykill District, Pa., is issued by the Le Grand Mine Drill Works of Wilkes-Barre, Pa.

Drafting room furniture is described in a neat 45-page catalogue published by the F. W. Emerson Manufacturing Company of Rochester, N. Y. Among the articles shown in the catalogue are drafting tables in many sizes and styles, cabinets, and blue print frames and tracks.

The Jackson hand power rock drill is described in a 14-page catalogue sent out by the Jackson Drill and Manufacturing Company of Denver, Colo. This drill has now been on the market 2 years and numerous testimonials printed in the catalogue show that it has given satisfaction under widely different conditions. The manufacturers claim for it great simplicity and ease of operation, as well as high efficiency. The Thornton N. Motley Company of New York City is the sole manufacturer for the eastern United States and foreign countries.

Mine managers, mill men, and others having a short supply of cold water for their power plants will be interested in an 8-page circular sent out by Louis Bendit, Burlington Building, St. Louis, Mo., manager of the branch of the Stilwell-Bierce & Smith-Vaile Company of Dayton, O. This circular describes the Victor cooling tower and the Victor atmospheric cooling condenser. These devices, it is stated, have an efficient distributing device for the liquid to be cooled, and are so arranged that large volumes of air are freely circulated with a minimum expenditure of power.

Messrs. Chas. H. Besly & Company of Chicago, Ill., issue a 300 page catalogue printed on light, tough paper, with hundreds of cuts. The catalogue is a perfect mine of information for all intending purchasers of manufacturers' and machinists' hardware, fine tools for metal workers, platers,' polishers' and grinders' supplies, brass and copper sheets, rods, tubes, etc. Messrs. Chas. H. Besly & Company also manufacture "Hamlet" bronze, "Pecora" machinery paints, "Perfection" and "Bonanza" oil cups and "Helmet" lubricating oil. The catalogue, with latest discount lists, is sent free on application.

Arrayed in a striking red and black cover, Catalogue No. 30, issued by the Sullivan Machinery Company of Chicago, Ill., is an improvement on its predecessors. The catalogue contains 81 pages, and the first 30 pages are given to a description of the Sullivan rock drills, which are put on the market in a number of sizes with various attachments and fittings, adapting them for mining, shaft sinking, tunneling, and quarrying. The drills are stated to have a patented valve of the differential type, simple, light, and exact; a durable and effective rachet device, and to strike a hard, uncushioned blow, recovering with the full power of the pressure. The tripod is stated to be very easy to handle and to have an unusually wide range of adjustment. Part II. of the catalogue describes Sullivan channeling machines, and Part III. diamond prospecting core drills.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

ARIZONA.

Cochise County.

(From Our Special Correspondent.)

Congress.—This mine is producing about 2,500 oz. of gold per month.

United Verde.—It is stated that these mines, at Jerome, this year will produce from 30,000,000 to 40,000,000 lbs. of copper. The daily product now averages 60 tons and upward; 1,000 men are employed about the mines and smelters.

Wolfram Ore.—The claims in the Dragoons are to be worked by two companies with New York backing. At present work is done by "Chloriders," who dig a few feet below surface where the rock containing the Wolfram is found in pieces ranging from the size of a pea to an ostrich egg. These men dig from 30 to 150 lbs. of rock in a day, which is said to contain nearly 70% tungstic acid. The companies which own the 16 claims propose to erect a concentrating plant to work the large quantities of low grade ore said to exist near surface.

Gila County.

(From Our Special Correspondent.)

Black Warrior.—The company is putting in a large leaching plant. It is reported that the ore bodies blocked out show 100,000 tons of ore.

Gila Valley, Globe & Northern Railroad Company.—This company has begun survey from its terminus to the Black Warrior Mine.

Graham County.

(From Our Special Correspondent.)

Detroit Copper Company.—The company is about to built a narrow gage road from Morenci to connect with the Arizona & New Mexico Railroad at Guthrie, 12 miles below Clifton. The road will be 18 miles long and will be extended from Morenci to the concentrator now under construction by the Detroit Company, said to be the largest in the United States.

Maricopa County.

(From Our Special Correspondent.)

Imperial Gold Mining Company.—County Recorder Sheridan recently received a letter from Henry M. Kidder of Scribner Neb., requesting information about the Imperial Gold Company, said to own 13 sections of land in this county. He particularly wished to know if the company's holdings are patented and have with water rights. There is no record in the County Recorder's office of the Imperial Gold Company, and there is no record of any mining company or other corporation owning 13 sections of "placer" ground. There is an Imperial Mining Company, whose articles are filed in the office of the Territorial Secretary, and there are articles of another company in which the name "Imperial" appears, but they are not operating in this county. Both companies were incorporated about 5 years ago.

Lime Creek.—A resident of Bangor, Me., wants information concerning the Lime Creek Copper Company. The company's prospectus represents the property as located on an immense fissure which starts from the Anaconda Mines in Montana and may be traced to the Gulf of Mexico, including in its course the mines of the United Verde Company, the Arizona Copper Company and the Copper Queen Company, and says the land is located on the northern boundary of Maricopa County. The property is as yet a mere prospect. The claims were taken up 11 years ago by John Chaney, who 3 years ago associated with him J. D. Marler as an equal partner. The Lime Creek Copper Company, incorporated 6 months ago, with a capital of $500,000 in $1 shares. Marler was made president of the company, but Chaney, a half owner, is not even a stockholder. He was willing to sell out for $2,500, but the company offered stock.

Arizona Copper and Gold Mining Company.—J. R. McKinnie, Colorado Springs, Colo., a large mine owner in the Cripple Creek district, and his associates, have obtained control of this company, which owns copper properties near the town of Collins. The property is said to have been explored for 3,000 ft. by prospect shafts, with good results.

Mohave County.

(From Our Special Correspondent.)

Arizonta & New England Mining Company.—Eighteen men are employed by this company at the sheeptrail claims and 15 on the Homestake claims over the river. The two 20-stamp mills now in course of erection will be ready to start about October 1st. Large bodies of free milling ore are said to be in sight.

Yavapai County.

(From Our Special Correspondent.)

Shirley & Vanderbilt have started suit against G. W. Hull for a share of the money paid for the United Verde Extension claims, near Jerome, and have succeeded in tying up the money paid on the property. This will not, however, touch the $75,000 said to be deposited for development work.

ARKANSAS.

Coal Miners' Strike.—It is now stated that the end of the strike, which has been on for several months, is in sight, so far as the Union Miners are concerned. The majority of the single miners have left the district, and only those with families remain. The strike occurred at a time when there was the least demand for coal, hence the mine operators were in a position to take things easy and wait. Two months after the strike started the companies, protected by an injunction secured from the Federal court, began the importation of miners. There are not enough union miners left to resist and the end of the strike is near. It is freely predicted that by October 1st there will not be an idle mine in Arkansas and the Indian Territory.

CALIFORNIA.

Amador County.

(From Our Special Correspondent.)

Argonaut.—At this mine ore is being hoisted from all the levels down to the 1,500 ft., and the mill is kept running steadily on pay rock and regular dividends are paid.

Central Eureka.—A mill run of 185 tons of ore from this mine, ½ mile south of Sutter Creek, milled at the Zeile Mill, yielded about $14,700, including the sulphurets. About $8 per ton is said to be lost in the crushing. Another lot will be sent to the mill in a few days. W. R. Thomas is superintendent.

Kennedy.—The new shaft at this mine is now down over 500 ft. and the shaft is put down at the rate of 100 ft. per month. Twenty-five men and 4 power drills are working. The 40-stamp mill is crushing day and night.

Lincoln.—The shaft at this mine, ½ mile north from Sutter Creek, is down 1,085 ft. and will be continued to the 1,200 ft., where a station will be cut. A crosscut being run on the 500 ft. from the east vein channel to the west vein channel, is now in 75 ft. A drift has also been run north 90 ft. on the vein channel at this level. So far the ore samples show about $3 per ton, carrying 4% sulphurets. The management believes that they will strike a good solid vein in this drift.

Calaveras County.

(From Our Special Correspondent.)

Lockwood.—This mine, 2 miles east from West Point, has been bonded by San Francisco parties, and the work of pumping out the water has begun. The old shaft was down about 300 ft., exposing 2 veins of good ore, the larger one being 14 in. wide. There is a good plant on the ground.

El Dorado County.

(From Our Special Correspondent.)

Darling.—Development work is progressing rapidly under the superintendency of D. H. Jackson, and the prospects of putting the property on a paying basis are very good. Grading for the installment of a 60-H.P. hoist is in progress.

Little Gem.—Fifty tons of ore from this mine near Josephine is to be run through the Esperanza Mill. The ledge from which this lot of rock is taken averages 20 in. and is rich in free

gold. Ten men are employed, working in 3 shifts.

Mount Hope.—At this mine on the south bank of the North Fork of the Consumnes River, 3 miles north from Grizzly Flat, considerable development work is being done by the owners. A new air compressor is being put in, and 2,000 ft. of 3 in. pipe is now on the ground. The property is opened by a tunnel. A 10-stamp mill is on the ground.

Mount Pleasant.—This mine, ¾ miles west from Grizzly Fat, owned by New York parties, which has been idle for some time, is now paying well, the sulphurets alone, which are shipped to the reduction works, paying working expenses. On the 800 ft. level some very rich ore has been encountered.

St. Clair.—At this mine in the Kelsey District, the shaft is down 80 ft. Six men are working. The outlook is good.

Kern County.

(From Our Special Correspondent.)

Butte.—The shaft at this mine in Fiddler's Gulch, 1 mile north of Randsburg, is down 165 ft. on the east end, with a drift both east and west and a winze east and wet of the main shaft. The ore in the drif is iow grade, while in the winzes is runs as high as $75 per ton.

Yellow Aster.—The July dividend of this company amounted to $20,000, making a total of $250,000 paid to date. Men are at work at the wells to develop more water, which will be needed if more stamps are added, as is contemplated in the near future. The machine shops are in course of erection, and the mill is working smoothly.

Nevada County.

(From Our Special Correspondent.)

Giant King.—This mine, 1½ miles south from Washington, comprising 3 claims, is being reopened by A. Pugh, who holds a bond on the property. The ledge is said to be very rich. The old development work consists of tunnels and crosscuts.

Placer County.

(From Our Special Correspondent.)

Bellevue Consolidated Gold Mining Company.—This company has been incorporated with the following officers and directors: F. E. Brye, president; P. S. Lozano, vice-president; A. L. Smith, secretary and treasurer; E. L. Hawk and S. Bartlett. The company has secured a bond on Bullion Nos. 1 and 2 and the Smith Extension, on the same ledge, which comprises 5,000 ft. A shaft will be sunk on the Bullion, compressed air being used to run the drills. Arrangements are being made to erect a 10-stamp mill. The total output of the mine since prospecting begun has been about $29,000. The property is 4 miles west of Auburn. C. A. Reed is superintendent.

Marguerite.—It has been decided by the management company to exploit this property, 1¼ miles north from Auburn, on the 300 ft. level, toward the southeast, and a contract has been let for the work. It is said that a 30 in. ledge has been encountered on this level.

Three Stars.—Some of the machinery from the Gold Note Mine, which has been closed down, is being hauled to this gold quartz mine in the Ophir District, 7 miles west from Auburn. The properties are owned by the same parties. Some of the machinery goes to the Alpine Mine at Georgetown.

Sierra County.

(From Our Special Correspondent.)

Philadelphus Mining Company.—This company has been organized with a capital stock of $100,000 to operate the Mammoth Springs Mine on a branch of Kanaka Creek, near Forest City. The directors are W. W. Treat, W. L. Ducey, G. R. Tuttle, L. F. Tuttle and P. S. Keefer, all of San Francisco.

Siskiyou County.

(From Our Special Correspondent.)

Wolverine.—At this property on Knownothing Creek, a ledge is worked by A. Heglan. It is said to be a true fissure vein 18 in. in width, assaying $60 per ton. The mine will be developed by a tunnel. Several promising ledges are being prospected in this vicinity, some of which carry high grade ore.

Trinity County.

(From Our Special Correspondent.)

Burgess.—The development work at this mine on Hicky Creek, a tributary of Coffee Creek, consists of a 100 ft. tunnel which crosscuts the ledge 60 ft. below surface. The vein is said to be 16 ft. wide, assaying $10 per ton. A mill is to be erected.

Trinity Gold Placer Syndicate, Limited.—This company, working the Nash hydraulic and drift mine at the headwaters of Coffee Creek, extending 7 miles along the creek, has about finished the big race which will connect the tunnel running through the mountain with the shooter at the junction of Union and Coffee creeks, 500 yds. above the mine. Arrangements are being made to build a new flume and open up above the shooter.

Tuolumne County.

(From Our Special Correspondent.)

Black Oak.—At this group of mines, ½ mile west from Soulsbyville, sinking still continues in the main shaft, which is now down 850 ft., at which point a station is to be cut and drifts run. The mill is supplied with ore taken mostly from the 800 ft., although some comes from below. A 2 compartment shaft has been started in the Live Oak ground, the vein being followed.

Bonanza.—This mine at Sonora has been closed down on account of lack of water to run the mill and compressors. As soon as the rainy season sets in they will start up again.

Goldwin.—The winze from the big tunnel is now down 110 ft., the bottom showing a fine ledge which continues to improve with depth. From this winze an upraise has been made to the surface, a distance of 95 ft., making it a working shaft. Thirteen men are employed.

Longfellow.—On the 300 ft. level of this mine on the north side of Big Oak Flat, some very rich ore is being hoisted from the drifts. The main shaft, now down 350 ft., is to be continued down to the 600 ft.

COLORADO.

Gilpin County.

(From Our Special Correspondent.)

Mining Transfers.—R. L. Burrus of Black Hawk to W. Spruce of Denver, 1/6 interest in Galena lode for $600, and ¼ interest in Mammoth lode for $600. George Niccolai to Thomas Channing, 1/3 interest in Whinnery lode. C. McNerney to C. F. McNerney, the Mansion lode.

Freedom.—A 45-H. P. Vulcan hoist and 60-H.P. boiler has been installed and a new shaft house, 24 by 50 ft., completed. The shaft is 400 ft. deep, and will be sunk to 1,000 ft. The Freedom Mining Company is composed of New England men. S. Hoskin of Central City is looking after the work.

Horseshoe.—J. Robb of New York has taken a lease and bond and has given a contract for 50 ft. of sinking. M. Whalen of Central City is manager.

Lullaby & Record.—Dr. Le. P. Davies of Central City has sold these 2 claims at Twelve Mile District to New York parties, who will put up machinery and begin work.

Pratte Gold Mining Company.—This company, backed by West Virginia capital, is going to build a mill at its Yankee Hill property, that is to be a combination amalgamating and concentrating plant, to cost about $50,000, with air compressor and additional machinery. J. J. Smith of Yankee Hill is manager.

Topeka.—A strike was made a few days ago in an upraise from the 700 ft. level. An assay of the ore showed values of 4,380 oz. gold, or a valuation of $87,600 per ton. Henry P. Lowe of Central City is manager.

Tucker.—This property is being opened by E. B. Curtis of Denver. The shaft has lain idle 30 years. It was a good producer of lead ore and is to be worked in good shape.

Lake County.

(From Our Special Correspondent.)

Leadville Output.—The past week has seen a good gain in the daily tonnage. The valley smelters, as well as the local plants, are again in the field for all classes of ore. The present output is about 2,300 tons per day, which will be increased in the near future.

Two New Mine Railways.—The Colorado & Southern Railway is fast completing its branch to Graham Park. Three switches are being run to the R. A. M. of the Small Hopes Consolidation, one to the Mab and another to the Mahala, all of which properties can increase their present production with rail facilities. Trackage is also being laid to the Greenback and others in that vicinity which are expected to become producers soon. The Rio Grande Railway this week put a large force at work extending its line to the mineral belt on the silver-lead area. The new line runs from the old Chrysolite across Graham Park section without scaling any hills and taps the Wolftone belt. It is to be extended at a later date. This railway belt from the 2 roads will encircle all the principal producers of the camp and promises a big increase in the daily tonnage. It is also learned on very good authority that the Rio Grande will build another line on the gold belt covering the territory which is not now reached by rail, along the southwestern section of Breece Hill and tap the Penn, Big Six, Ballard and President.

Comstock Mining Company.—This new company, managed by R. B. Estey, is well under way on its new deep shaft. The hoisting plant is at work and the shaft is down 160 ft.

Downtown Mines.—The Leadville Pumping Association has turned over all the properties of the downtown section, Leadville basin, to the various companies owning them. The Home Mining Company has three shafts busy and expects to be shipping this week from the Bon Air. The Bohn is shipping 30 tons per day; the Northern Mining Company is shipping 80 tons daily; the Coronado is shipping iron ore, while the lessees, who are shipping on a small scale from the old Sixth Street, are arranging to start up this property also.

Golob-Colley Zinc Mill.—Arrangements for increasing the capacity were made this week and the old Antioch Mill will be enlarged and refitted for a big zinc production. It is learned that the company will also lease the old Maid & Henriett Mill soon and almost double its present output.

Hamburg Mining Company.—H. D. McAllister and P. Connell have just secured a good lease on the Curran and Grand Prize claims, owned by this company on Breece Hill. The Curran shaft is to be sunk to cut either the Ballard or the Highland Chief ore shoots.

Mab Mining Company.—Through the Mab shaft the company is opening up its enormous lead sulphide bodies and in addition to resuming heavy shipments to the valley smelters some ore will be handled here. The tonnage for the present will be 150 to 175 tons of fair grade ore per day.

N. M. Strike.—The mineral find continues to show up well. The shaft has been driven 30 ft. through ore. The stuff runs about $12 to $15 to the ton, but further development will be necessary to determine the full value. Manager Jas. Tattersall is very enthusiastic over the outlook.

Penn Mining Company.—Operations are in full swing and Manager Sullivan will output 100 tons per day as a minimum. The ore runs from 1 to 1¼ oz. gold. No. 1 shaft has reached 700 ft., and it is intended to thoroughly explore this lower horizon in order to open up the sulphide shoots. The tonnage comes from 3 shafts, and while it could be run up to 200 tons, it is the intention to keep it on an average of 100 tons during the time that development and prospecting is being carried ahead.

Superior Group.—This new proposition includes the Keystone, Superior, California, Mountain Boy, Loveland, Dubuque and Theresa lodes, and work has started through the Keystone claim, which already has a shaft 300 ft. deep. It is nearly all virgin territory with a promising outlook.

Weston Pass Section.—The Ruby is pushing development on its lead ore bodies and has resumed shipments in earnest. In the Bryan the lessees have stopped sinking at 140 ft. and are drifting. A California syndicate is negotiating for a large acreage lying near the Ruby and the deal will probably be closed.

Larimer County.

Flagstaff.—A 2/3 interest in the bond on this copper claim, 45 miles northeast of Fort Collins, is reported bonded by Herner & Nungesser to Eastern parties. The claim is on land belonging to William Compton.

Park County.

Black Flag.—This property, at Alma, is equipped with a 10-stamp mill connected by a tramway with the mine. The mill is an amalgamating and concentrating plant, one Wilfly table treating the tailings. The mine was worked steadily until the present season. The mine and mill has recently been secured by the Gold Ore Company, and will be worked in connection with the property of that company.

Gold Ore Mining Company.—This company owns a number of claims, including the Pittsburg, German, U. P., Midland and K. P. The property is developed by 4 tunnels, the lower tunnels being driven to reach the lower contact, a distance of 350 ft. The total length of workings in the property is about 1,200 ft. Smelting ore is being taken out of the upper workings. The company is preparing to make extensive improvements on its property. The mill will be used for the treatment of the low-grade ores, and if the tests are satisfactory 10 more stamps, already on the ground, and more Wilfley tables will be added to the plant.

Pitkin County.

Argentum-Juniata.—The annual report of this Aspen Company shows a net profit in the year of $121,203. The property is valued at $2,629,294, and the company has $61,435 in bank. "It is with great pleasure," says President Hayes, "that I report that the operation of the mill for the past year has exceeded expectations, and the increased savings and higher degree of concentration have enabled us to make a profit even when the grade of ore has been very low."

Homestead.—A rich strike of high grade ore is reported in this mine near Aspen, reached through the Cowenhoven tunnel. The principal owners are D. R. C. Brown and E. T. Butler.

Teller County—Cripple Creek.

Stratton's Independence, Limited.—The report of T. A. Rickard, consulting engineer of the company, for the 3 months from May 1st to August 1st, has been submitted to the board of directors. The total production of ore in that period was 8,847 tons, containing by monthly averages from 3.9 to 4.3 oz. gold per ton, and having an average value of $80.38. The value of the output by months was: May, $245,748; June, $211,316; July, $251,042; making a total of 708,106 oz. It is stated that profits have been in the

proportion of fully 75% of the value of the ore marketed. The total amount of work done in the mine in the 3 months was 172,912 cu. ft. of stoping, 395 cu. ft. of raising and 473 linear ft. of drifting. This makes the total tonnage raised 15,942 tons, of which 6,150 tons were waste rock sorted out as soon as the ore reached surface, and 9,792 tons were clean ore, of which 9,222 tons were marketed, the remainder, 570 tons, being on hand. The measurement of the areas mined shows that the average width of clean ore was 4¾ ft. The estimates on which the mine was bought gave the average width as 3½ ft., the average value as 4¾ oz. per ton and the total tonnage 70,000. The production from the ground opened at the time of the transfer will exceed the estimates. The stoping done has been distributed over the 1st, 5th and 7th levels and has avoided choosing the richer spots, most of the work being a systematic beginning. Additional evidence has been secured of the great prospective value of the unexplored territory between the second level and the surface, the work in the bottom of the mine has been satisfactory, and the exploration on the Independence vein at the 4th level warrants the belief that within the next quarter ore reserves valued at $1,500,000 will be developed in that territory. To push development faster a 6-drill compressor is to be installed.

(From Our Special Correspondent.)

A fire wiped out the business portion of Victor on August 21st. The burnt area comprised about 12 blocks. The large shaft house and the ore house of the Gold Coin Mine was completely destroyed and the buildings of the Strong Mine and the Rio Grande Sampler were saved with difficulty.

The shafthouse of the Jolly Tar and one of the shafthouses on a lease on the Mt. Rosa Placer also went. The machinery on the Sweeny lease, however, was not destroyed and a small shaft house is already being erected. Nothing is being done on the Jolly Tar, which was not worked at the time of the fire. Several little gallows frames, such as the Spicer and the Little Montana, were also destroyed. Victor is alive with men cleaning up the debris and erecting temporary shacks. It is the intention to grade the streets before more permanent buildings are erected.

Columbine-Victor Tunnel.—Connection has been made between this tunnel, which runs through Squaw Mountain, and the Gold Coin shaft at a depth of about 120 ft. The length of the tunnel is 3,740 ft., the western outlet being in Arequa Gulch, close to the Economic Gold Extraction Company's mill. The mill and the tunnel are controlled by the Woods Investment Company. The ore from the Gold Coin will be run through this tunnel and treated at the mill, which will have when completed a capacity of 600 tons per day. Work on this mill is being rapidly pushed.

Gold Coin.—Men are tearing down the ruins of the new brick club house, that was being erected for the employees of the mine, and cleaning up around the ruins of the shaft and ore houses. Quite a batch of ore was in the bins at the time of the fire and this is being loaded into the cars and taken away. A stone wall is to be erected in place of the cribbing formerly around the shaft house. The new gallows frame and shaft house are to be steel. The shaft was burned down about 250 ft., but it will soon be in good shape again. Access will be had through 1 or 2 of the older shafts. New machinery has been ordered. The club house will be rebuilt.

Independence Town and Mining Company.—Another suit has been filed against this company by the Wilson Creek Consolidated Company. It asks that the Independence Company be enjoined from taking out ore from the ground in conflict between the Hull City Placer and the Little Effie lode. The Wilson Creek people also ask $800,000 for ore that they allege belonged to them.

La Bella Water and Power Company.—The new electric plant is in operation. It is situated in the town of Goldfield. The current generated by the plant will be used to run the Golden Circle Railroad and a part of the Florence and Cripple Creek road, which are now being run by steam. Power will also be furnished to run hoists and other mining machinery. The engines which have a capacity of 3,000 H. P. were built by the McIntosh Seymour Company of Auburn, N. Y., and the electrical machinery was put in by the General Electric Company. Connected with the plant is a large air compressor, from which is distributed compressed air to a number of the surrounding mines. This part of the machinery has been in operation for several months. The Smith-Moffat interests of Denver own the property. L. L. Summers is engineer in charge.

Raven Gold Mining Company.—This company has declared a dividend of $10,000. It has paid dividends before, but not regularly. The property is on Raven hill. Very little information is given out about this company.

T. F. T.—This company, on Bull Hill, has declared a dividend of 7c. per share, making a total of $35,000 to be distributed among its stockholders. The money was derived from the sale of its property.

FLORIDA.

Phosphate Industry.—A new railroad is being built by the Drew Lumber Company from McAlpine to Dead Man's Bay on the Gulf. This will open up a field that has been little worked owing to the lack of transportation facilities. The Dutton Phosphate Company is erecting 3 new plants near Wade. The Newberry Phosphate Company (H. A. Ford) will erect 2 plants at Early Bird and one at Newberry. This will make 10 plants operated by this company, producing about 600 to 700 tons per day. Edward Holder will erect a plant at Elliston; he has recently completed a plant at Juliette and one at Hartshorn. Messrs. Hazard & Company, who have erected 6 plants this year, will erect another at Juliette.

GEORGIA.

Lumpkin County.

Dahlonega Consolidated Gold Mining Company.—The 352 ft. tunnel at the Hand Mine near Dahlonega is completed. Work of erecting the big chlorination plant has started.

Twiggs County.

Durham Coal Mines.—According to a Chattanooga despatch these mines, just across the Tennessee line, have been purchased by a syndicate of Chattanooga capitalists. The property lies on the southern border of Lookout Mountain. New mines are to be opened at once on adjoining property owned by the capitalists interested, and the Durham Mining Company will be reorganized. It is intended to build 300 coke ovens at once. The price paid for the property is given as over $200,000.

IDAHO.

Blaine County.

Croesus.—The management of this mine at Hailey has been obliged to postpone sinking the shaft to the 1,000 ft., as the Ingersoll-Sergeant Company of Easton, Pa., has been unable through press of work to deliver the 12 drill compressor ordered.

Payette Mining Company.—This company has bonded the Gold Dollar Mine at Pearl and has started work with N. J. Sorensen as manager. The 450 tunnel is being cleaned out and a concentrating plant is to be erected. The ledge is stated to be 4 ft. wide, to average $33 per ton, and to concentrate 11 to 1.

Boise County.

Basic Dredging Company.—The company is running a 600-H. P. electric plant at Placerville from its 8-mile flume on Grimes' Creek. The plant furnishes power to 3 dredges belonging to the Bullion, Boise and Bedrock Dredging Companies. Two are on Grimes' Creek and the third at Placerville, on Wolf Creek. The dredgers are of the Bucyrus type, with a working capacity of 2,500 yds. each per 24 hours. The four companies are under one management. The dredger "Lippencott," at Placerville, has 38 elevator buckets, each of 5 cu. ft. capacity, and a 4 by 15 ft. revolving screen, below which is a centrifugal pump. The material screened and washed passes through an iron flume 4 ft. wide and 125 ft. long, in the bottom of which are slats and Hungarian riffles for saving the gold.

Lucky Boy.—This mine is equipped with a 10-stamp mill, which is running. A tunnel cuts the ledge at 300 ft. depth, and cross-cutting to hanging wall is going on. The ore is said to have cleaned up $8 per ton. The property belongs to John P. Reno of Pittsburg, Pa., who bought it last year for $22,000.

Mountain Queen.—This property is under bond to L. C. Ferree, J. M. Jackson, John Kinkaid of Denver and H. L. Hollister of Boston. It has a 20-stamp mill and is being developed by an 800-ft. cross-cut tunnel, which will cut the ledge at 370 ft. below the surface, the same ledge being opened by an upper tunnel, above which the ledge is stoped to the surface and along the vein for 1,000 ft. The ore is said to have averaged $8 per ton on the plates. In the lower tunnel a blind lead 6 ft. wide ran $5 per ton.

Twin Springs Company.—This company is working 2 giants, with 200 ft. head of water against a bank 100 ft. high, near Idaho City. This property was bought last year from K. P. Plowman of Boise. The work is in charge of H. L. Woodburn.

Owyhee County.

Cumberland.—At this mine near Silver City work is confined to the 200 and 300 ft. levels, where men are driving north and south from the shaft, opening up new ground and preparing the mine for steady production upon the completion of its mill. A winze is being sunk at the 200 level, 100 ft. north of the shaft, to connect with the 300 level. In this winze is a ledge 6 in. to 2 ft. wide coming in from the hanging-wall, rich in gold. Mr. Jenkins is manager.

De Lamar Mining Company, Limited.—Capt. J. R. De Lamar it is stated recently brought suit in the Federal court against this company for infringing upon and using a certain patent for extracting gold from low grade ore after the same has been treated by cyanide of potassium. He claims ownership of the patent, granted in 1893 to Martin E. Waldstein, which patent covers the use of zinc dust, made from zinc and zinc oxide, in precipitating the precious metal after the cyanide has done its work. The De Lamar Mining Company has treated 75,000 tons of ore by this process, so the plaintiff alleges, and he has asked $1 per ton royalty thereon. He also asked the court to treble the amount as damages. At the mine work is progressing rapidly on the new tunnel. It has been driven 200 ft. and will be 3,000 ft. in length, and tap the property 130 ft. below the lowest present workings.

Dewey Tunnel.—The compressor plant from the Blaine tunnel has been moved to Dewey and will be used to drive the tunnel under Florida Mountain. The company has a larger compressor ordered for Silver City which will be placed in T. D. mill. The foundation for it was put in last fall.

Gold Rock Mining Company.—President L. W. Getchell and Secretary-Treasurer C. W. Saunders of New York of this company, operating the Mammoth Mine on Florida Mountain, near Silver City, have been visiting the property.

Pauper.—A 40 H.P. double-drum hoist has been erected at this mine, near Silver City. Lumber is on the ground for the new shaft house which will be erected on the site of the one burned down in the early '70's. T. W. Jones of Wagontown will do the work. The old shaft is being repaired and retimbered. It is down 400 ft. and will be sunk 200 ft. deeper and the ground thoroughly prospected. J. J. and J. L. Crutcher are at the head of the enterprise.

Red Jacket.—This old mine, on War Eagle Mountain, near Silver City owned by the Shaw Brothers of Silver City and F. W. Morrison, has been bonded to Sonneman & Branscombe. A small force of men is at work cleaning up the tunnel, under the direction of R. C. Williams.

Shoshone County.

Labor from outside is coming into the district with the prospect of law and order prevailing. Among the last arrivals were 45 men from Leadville and Cripple Creek.

Bunker Hill & Sullivan.—The company is running one side of its rebuilt concentrator. The plant is not running full blast simply because the machinery company that was to furnish a new compressor has been unable to make delivery as soon as expected, and until the new compressor is installed the output of ore from the mine will be curtailed.

16 to 1.—The old Gem air compressor is being hauled up to the mine. While it is being put in, the Custer mill will be overhauled and a tramway built from the mine to the mill. In the meantime the Northern Pacific will extend its Nine Mile branch up to the mill, so that there will be no delay in shipping. The drift now being run on the vein will be connected with the shaft about the same time, when everything will be in shape for stoping.

INDIANA.

Oil Lands Sale.—Nearly 3,000 acres in Chester and Jackson Counties have been transferred by Sam W. Tait of Montpelier to the Standard Oil Company, besides 3 pieces in Blackford and Grant Counties, and a piece in Wells County. Mr. Tait has on his leases 81 completed wells, with an average daily production of 300 barrels. For the leases, wells and machinery the Standard is stated to have paid him in cash $115,000.

KANSAS.

Coal Miners' Wages.—Operators in the Leavenworth District have announced an increase in wages of 2/5c. per bu., to take effect September 1st.

MICHIGAN.

Copper.

Wyandot.—The shaft in the Winona ledge is down 70 ft. The company recently bought about 500,000 ft. of standing pine, and will erect a saw mill.

Arcadian.—No. 3 shaft at this company's property, near Hancock, is expected to be fully equipped and its new shaft and rockhouse in operation by September 15th, and about October 1st the second head at the mill will be treating rock. "A" shaft, the most southerly, is ready for sinking. At "B" sinking is under way. No. 1 shaft is being sunk to the 5th level, and No. 2 will reach the 9th level in September. Sinking to the 7th level is soon to begin at No. 3, while at No. 4 shaft sinking to this level is now under way. The Arcadian has to-day a total of about 18,000 ft. of openings, 15,000 of which have been made by the present company. The equipment at No. 4 shaft, including the rockhouse, is expected to be ready for service November 1st.

Iron—Gogebic Range.

The total shipments of Gogebic ores from Ashland up to August 28th amounted to about 1,600,000 tons.

Ashland.—This mine, near Bessemer, is being pumped out.

Aurora.—It is reported the Oliver Mining Company may buy this property at Ironwood.

Davis.—This new mine, near Ironwood, recently made its first shipment, amounting to about 3,000 tons.

Iron—Menominee Range.

Iron Ore Discovery.—A find of ore is reported 7 miles east of Sagola on the Lake Superior Division of the Chicago, Milwaukee & St. Paul Railroad. The ore is said to be Bessemer grade, but the published accounts in local papers evidently exaggerate the size of the find and further particulars are awaited.

MINNESOTA.

(From Our Special Correspondent.)

Vessel rates continue to ascend, and ship owners stand back and watch ore owners bid up. Now grain shippers have taken a hand, and this week 4½c. was paid for spot tonnage and 5c. for delivery in October. That rates will keep mounting till they reach the point where shippers will pay no more there is no doubt. Five cents on wheat is equal to $1.85 a ton on ore, and what the ore men will do when it comes to paying that remains to be seen. Now they say they will stop shipping first. All classes of Lake freights are keeping company, and the rate for coal to the head of the Lakes from Lake Erie is 60c., with no boats to be had for that. Seventy will be paid before the week is out.

Stockpiles of Minnesota mines are pretty well gone, and by Sept. 10th there will be little left of them, except at Chandler and Hibbing mines. Before that date the stocks of Fayal, Genoa, Auburn and Canton mines will be shipped, by the 10th those of Adams will be gone, and shovels are busy at those of the Consolidated mines at Hibbing. It is possible these will not all be shipped this year. Vermilion stocks are practically gone, except at Chandler, where shovels are now beginning on No. 3 pile, containing 135,000 tons. Savoy stocks are being shipped at the rate of 1,500 tons a day, and it won't take long to finish them.

Six companies, organized under the laws of Michigan, with their headquarters at Saginaw, have moved to Marquette, to be still in Michigan but nearer the scene of operations. They are the Lake Superior Company, capital $100,000; the New Missabe Land Company, capital $50,000, successor to the Wright-Davis Company; the Wright, Stone, Davis and Wells Land Companies, each capitalized at $12,500. These concerns represented part of the Wright-Wells-Stone-Davis interests on the Mesabi Range, which not long ago were sold to Jas. J. Hill and the Great Northern road for $4,000,000. This change in location comes as a result of the sale.

This season the State has granted 66 prospectors and mineral leases. Last year it gave 21, the year before but 4, and in 1896 only 1. The difference fairly represents the change in prospecting activity.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Colonial Mining Company.—The Hale Mine of this company, whose headquarters are at Duluth, has resumed stripping under a contract by Davis & Davis, of Duluth, who are paying $2 a day for laborers.

Diamond Iron Company.—The exploration under way 7 years ago at the west end of the Mesabi Range, in Itasca County, is resumed, and some 25 men are there getting ready for pumping the shafts. Later, says the manager, 100 men will be put at work, and mining begun. As far as is generally known, however, the presence of ore in paying quantity and quality has not yet been definitely settled. The mine is owned in Minneapolis, as is the Buckeye, close by, operations on which are to resume later. The Eastern Minnesota will build a spur track of some 4 miles to the property as soon as mining can begin.

Fayal Iron Company.—This mine has so far shipped not very much over 550,000 tons, and its July shipments were but 90,000. Now it is sending out 250 cars a day.

Minnesota Iron Company.—This company, through D. H. Bacon, its president, has bought for $185,000 cash, the Iron Chief Mine and the Monarch Iron Company's lands, the former located in the western part of T. 58, R. 19, and the latter scattered over the range, from T. 58, R. 16, to T. 58, R. 20. The deal was made without preliminary exploration option, as the Minnesota Company in 1893 or thereabouts explored the Iron Chief. At that time the company had an option on the Chief for $625,000, but failed to close it. The purchase means that the Duluth & Iron Range road will be extended west through T. 58, R. 18, and R. 19, paralleling the Duluth, Mesabi & Northern and the Eastern Minnesota. The Monarch lands were the property of the Cloquet Lumber Company, and were sold by it early in the Mesabi excitement of 1892-3. There is still a purchase money mortgage of $30,000 on the lands. Iron Chief is claimed to contain a body of some 6,000,000 tons of ore, so far shown up, but probably of rather low grade. On several of the Monarch tracts are known to be more or less valuable deposits, and the opportunities for exploration are excellent.

Iron—Vermilion Range.

(From Our Special Correspondent.)

Explorations.—Test pits preparatory to diamond drill work have been started in section 36, T. 63, R. 16, which lies 6 miles north of and across Vermilion Lake from the Minnesota Company's mines. Capt. Elisha Morcom of Tower is in charge of the work. It is said that the indications are promising. G. A. St. Clair, of Duluth, is exploring a considerable tract of land in the south tier of sections of T. 63, R. 13, 10 miles west from Ely, and on the line of the Duluth & Iron Range. A lease, carrying a 25c. royalty and a 50,000 ton minimum, has been signed. It is supposed that the formation is a continuation of that of the Chandler and Pioneer, though their ore body ends near the west side of Chandler. The Pike River Land and Improvement Company, of Tower, has optioned to M. Lynch a property in T. 60, R. 15, about 10 miles south of Tower, which he is to lease in 90 days at a 12c. royalty and a small annual output, if he desires. A diamond drill working for R. Whiteside, of Duluth, near Winton, east of Ely, has been moved to his lands on Garden Lake, near-by.

Oliver Iron Mining Company.—At this company's Savoy Mine the stockpile is being shipped at the rate of about 1,500 tons a day. Improvements continue at all the mines of the company.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—There was no change in prices this week. Top grade zinc ore sold at $45 per ton, while lead brought $27 per 1,000, as for several weeks. Lower grade zinc ores were not in as good demand, and did not bring as good prices as last week; both the output and the sales fell off. Several of the smelters are contracting for Colorado zinc ores which are of high metallic value, but not as easy to reduce as the soft Missouri ores on account of the large percentage of iron they carry. One large smelting concern claims to have contracted for several thousand tons of 60% Colorado ore laid down at its Western works for $30 per ton and the Veille-Montagne Zinc Company of Belgium is said to have recently made a contract for 5,000 tons f. o. b. at the Colorado mines at $8 per ton. As compared with the previous week the sales show a falling off of 1,379,870 lbs. of zinc ore, 96,980 lbs. of lead ore and the value was less by $35,910. During the corresponding week last year, top grade zinc ore sold at $30 per ton and lead brought $24 per 1,000. The lead sales were greater than last week by 180,170 lbs., but the zinc sales were less by 2,001,830 lbs., and the value was less by $78,899. For the corresponding 34 weeks last year the lead sales were greater than this year by 5,521,594 lbs., but the zinc sales were less by 65,133,980 lbs., and the value was less by $3,411,944. Following is the turnin by camps:

	Zinc, lbs.	Lead, lbs.	Value.
Joplin	1,845,420	289,450	$31,837
Galena-Empire	2,573,040	185,150	56,439
Carterville	965,280	218,040	27,024
Duenweg	330,560	18,970	7,123
Granby-Newton Co.	341,000	14,140	6,540
Oronogo	962,610	4,290	18,385
Webb City	496,630	53,920	12,381
Stotts City	198,340	38,220	5,308
Dade County	245,020	.....	3,530
Central City	320,560	8,000	6,627
Belleville	346,730	7,120	7,821
South Jackson	255,600	4,070	5,221
Cave Springs	83,270	8,380	1,891
Carthage	124,410	.....	3,062
Alba	40,450	.....	910
Hells Neck	140,590	15,540	3,512
Barry County	101,780	.....	1,425
Wentworth	44,210	.....	898
Racine	37,500	.....	788
Aurora	961,340	22,550	18,067
Morgan County	72,530	66,460	2,996
Total for week	10,486,870	954,300	$221,806
Total 34 weeks	350,782,600	31,223,296	$7,568,246

The ore buyers are paying the scale of the Missouri & Kansas Zinc Mining Association, but are not satisfied with it, claiming it is too high for the present price of spelter, and there is an evident determination on the part of the smelting interests to force the association to lower the scale some way or other. There seems now to be no likelihood that the operators and metal manufacturers will reach any agreement or that the association will be recognized by the smelting interests as having any influence on the market. The constant friction between the two may eventually result in the building of smelters by the association or by outside capital allied to the association and in sympathy with its purpose. It would be better for both sides if an agreement could have been reached.

One of the most horrible accidents that ever occurred in the district was the explosion which utterly wrecked the Marguerite mill on the Hannum & McElroy ground at Carterville on August 22d, and killed 5 men. The explosion was caused by the carelessness of the ground foreman in preparing shots. He was sitting on a box of dynamite in the engine room and was crimping a cap on a fuse, with his teeth when the cap exploded and three boxes of dynamite exploded immediately after, wrecking the mill and killing everybody in the vicinity. The killed were Henry Gilbert, one of the owners of the mill, a resident of Carterville, and Frank Huddleston and Thomas Holman, ground men. David L. Sinclair of Duluth, Minn., and C. H. Robbins, who had recently come to Joplin from Sedalia, were also killed. They had gone out to look at the property, which Mr. Sinclair contemplated purchasing, and had just arrived at the mill when the explosion occurred.

MONTANA.

Deer Lodge County.

Anaconda Copper Company.—According to a local paper the company's concentrating plant at Anaconda has been equipped with 6 steam crushing stamps, which are to be removed. No. 1 stamp has already been torn out, preparatory to placing a Gates crusher and two sets of rolls in lieu of the stamp. The ore will pass from the crusher to the first set of rolls, and thence to the second set for finer work. The main purpose of the change is to avoid the excessive production of slime, which comes from the stamps. This slime is very difficult to handle, and holds considerable value. The concentrator is now equipped with 142 Cullom jigs and a number of Hart jigs of smaller capacity than the Cullom. These are to be taken out and replaced with Culloms, thus adding considerably to the jig capacity. Besides this, a number of settling tanks are to be removed and the space filled with new jigs—some 12 or 14. An important work under way is the placing of a new set of jigs below those now in use. Eighteen of these are being put in and the foundation work is proceeding for 18 more. These jigs will handle tailings from the upper jigs after having been reground. Mills for regrinding will be put above the new jigs. The tailings to be handled now go to waste, carrying more or less of value. The increase of capacity that will be obtained will be considerable. As a result of setting up these new jigs, other places must be found for the displaced settling tanks further down in the mill.

Flathead County.

Fisher Creek Mining Company.—This company, organized under the laws of Montana and Iowa, has $85,000 capital in $10 shares. All of the machinery for the 10-stamp mill which is to be erected on the Brick and Brannagan group of claims in the West Fisher, is being hauled out to the claims from Libby. The ore from the mine will be conveyed to the mill by a bucket tram about ½ mile long. Steam power will be used at first, but as soon as the mill is running work will be started on a system of water power. About 30 men and 10 teams are employed.

Gallatin County.

Mountain Side Coal Company.—This company, composed of Don E. and M. J. Johnson, of Chestnut, and Frank J. Davies of Helena, has made an important strike in its property ½ mile east of Chestnut. The company took out some coal last winter, but encountered a fault and has been running through rock until a few days ago one of the finest veins of coal ever struck in the Bozeman District was encountered. The Mountain Side property is within a few feet of the Northern Pacific Railway tracks. The company proposes to push developments.

Jefferson County.

Broadway.—John Berkin of Boulder has, it is said, completed the sale of this mine near Silver Star to an eastern company. Under the new ownership he will remain as manager. The parties who held the bond on the mine and who are interested in the sale are Messrs. Berkin and Gaffney of Boulder and George L. Tracy of Helena.

Gold Mountain Mining Company.—The personal property of this company, at Boulder, consisting of the mill, hoisting plant and machinery, was sold recently by the sheriff under an execution and judgment for $12,000, obtained by W. A. Clark & Brother. It was purchased by H. L. Maury for $1,800. It is said that the mine will be sold later under the same judgment.

Madison County.

Leviathan Mining and Milling Company.—The company's property is in the Mammoth District 7 miles west of Pony. A 10-stamp mill with 2 improved vanners was recently erected and is running smoothly. The ore carries gold and some copper and about 20 or 25 tons are run through every 24 hours. This is the only mill in the immediate district, and several mine owners are watching to see if the process proves to be a successful one. Reece Wampler is superintendent.

Watseka.—The Butte company that has the option on the Watseka, at Rochester, is still sinking, and is now 190 ft. down. When the 200 is reached a tunnel will be run to the vein and tap it much lower than it has ever been worked. Water has interfered in the past, but the present company experiences no trouble, as it has modern pumps and power to run them.

Silver Bow County.

Butte & Boston Smelter.—This plant, says the Anaconda "Standard," differs from the Colorado and the Butte Reduction Works in converting

the matte into pig copper, and from the Great Falls and the Anaconda works in not having a refining department. The works are of somewhat greater capacity than either the Colorado or the Butte. The concentrator will handle 650 tons of ore each 24 hours, while the smelter can reduce all of the concentrates from this ore and about 150 tons of green ore besides, making the total capacity about 800 tons a day. All of the blast furnace work is done at the Great Falls smelter of the Boston and Montana Company. The ore is crushed and concentrated. After passing through the first set the crushed material is carried over coarse screens, which catch the coarser material, which is run through a second set. The fine material passes through trummels and thence to the jigs. There are 4 Huntington mills for grinding middlings from the jigs, which after being ground pass over Frue vanners. There are 8 O'Hara calcining furnaces. After being calcined the ores pass to the matte furnaces. The molten matte is carried directly from the matte furnaces to the converters by a traveling crane. Trough converters are used in the Bessemerizing department. The copper pigs as cast weigh about 225 lbs. each.

Montana Ore Purchasing Company vs. Boston & Montana Consolidated Copper and Silver Mining Company.—This suit, brought to determine the ownership of the Pennsylvania claim, has been dragging its slow length through the court at Butte. Unlike many of the Butte mining contests, the case is not a jury trial, but is before Judge Clancy, consequently the decision is likely to be fairer to both sides than if a jury which knew nothing of mining were told to find the truth in a maze of conflicting expert evidence about "lodes," "zones" and "fissures."

The plaintiff had for its chief witness James McFarlane. In his testimony he was aided by an ingenious glass model showing the workings of the Rarus and Pennsylvania mines, besides numerous maps and cross sections. The plaintiff discards the single ledge or vein theory, and claims all of the ore bodies in controversy are included in a great lode which has its apex in plaintiff's ground and then dips to the south so as to carry it beyond the plaintiff's side lines and beneath the surface of the defendant's ground. The lode, it is claimed, contains a number of different veins or ledges, all co-ordinated and apexing together.

Parrot.—The smelter at Butte finally closed down on August 25th. The concentrator shut down over a month ago, but about 40 men have been employed keeping the converter going since then.

The mine is now turning out 400 tons daily. Of this about 50 tons is sent to the Colorado smelter and the remainder to the works at Anaconda. An excavation is being made for ore bins just south of the shaft, and it is understood that the mine will soon be equipped with 5-ton skips which will dump directly into the bins. The hoist is provided with a 600-H.P. Fraser & Chalmers engine. The boiler plant consists of six 60-H.P. tubular boilers. Four similar boilers will be transferred from the Bellona, also a Parrot property. There are at present 10 levels in the mine, averaging a little over 100 ft. each, so that the depth from the collar of the shaft is about 1,100 ft. The shaft is being sunk 100 ft. deeper, and the work is now in progress. The flow of water here is smaller than at many Butte mines, but it is said to be especially rich in copper. For handling the water the mine has an 8-in. water column, lined with lead and wood in the usual way, and a Knowles pump on the 1,000-ft. level. This pump can take care of the water by working 6 hours out of the 24. Fifteen new precipitating tanks have just been built for the saving of the copper from the water. The working force is 180 men. T. Lynch is foreman.

NEW YORK.

Orange County.

Mica Discovery.—It is stated that the farm of James McKee, at Edenville, on which mica was found recently, has been sold to a company that will develop the mica formation.

OREGON.

Baker County.

Eureka & Excelsior.—This property at Bourne is still closed down.

Golconda.—This property at Bourne is developed by 2 main tunnels, one 750 ft. long in the foot wall and another 150 ft. in the hanging, with a crosscut connecting them. A shaft is down 250 ft. from the tunnel level, from which are drifts in opposite directions. About 1,800 ft. of work has been done. Near the surface the ores contain considerable arsenic and antimony. The principal values are gold. The vein is 100 ft. wide in places, with rich streaks about 3 ft. wide. On this property is an electro-chemical process mill —using chlorine—patented by Greenawalt & Robinson of Denver, Colo., which is said to have cost $100,000. It is not yet running regularly. Mr. J. G. English is owner of the property and W. H. Jackson mine superintendent.

Virtue.—It is stated that the Virtue Consolidated Mining Company will work the old Virtue Mine at Baker City again. The 1,000 ft. will be retimbered to water line and the mine pumped out.

Grant County.

Copper King.—This property, in Quartzburg District, is reported sold to Eastern parties by Messrs. Jackson and King.

Cougar.—This group, near Granite, is owned by J. W. Larkin and D. R. Evans. It is opened by a 600 ft. drift on the ledge, reached by a cross-cut tunnel. The vein is said to run from 3 to 20 ft. wide, and has been opened by surface cuts for 1,500 ft. There is also a shaft on the ore body. The ores are claimed to run $75 per ton. A 250-ton cyanide plant is being built on the property, which will be one of the largest mills in Oregon.

PENNSYLVANIA.

Tyrone Mining and Manufacturing Company.—W. W. Kurtz, of Philadelphia, recently purchased the interest of this company in the ore rights of the Dry Hollow property, containing over 3,000 acres of land, in Huntingdon and Center Counties, and becomes the sole owner of the ore rights. The ores are brown hematite, and have been used at the Saxton Furnace, at Saxton, on the Huntingdon & Broad Top Railroad. Mr. Kurtz is putting in new machinery and appliances and making extensive additions so as to increase the output.

Anthracite Coal.

Bliss.—Work was temporarily suspended recently at this colliery, near Nanticoke, owned by the Delaware, Lackawanna & Western Company and also at the Auchincloss shaft.

SOUTH DAKOTA.

Custer County.

Chicago Mica Mining and Milling Company.—This company, according to a Chicago paper, has mica properties near Custer, where a vein 4½ ft. wide has been laid bare. A factory will be built in Chicago, where the mica will be made ready for stove doors, lamp chimneys, etc. The refuse flakes and edges when ground will be used to give a glossy effect to wall paper, for electrical work, for lubricants and as a substitute for cork in linoleum.

(From Our Special Correspondent.)

Empire and Baker.—These locations, about 2 miles west of Custer, consisting of 10 claims, are owned by William Tarrant and Edward Rogers. On the Baker claim a shaft is down 100 ft., with a crosscut of 80 ft. On the Empire a shaft is down 80 ft. and another 100 ft., with a crosscut of 90 ft. Development work is being done on the ground.

Vigilante.—A pyritic ore is showing in the bottom of the shaft which carries some values in gold.

Lawrence County.

(From Our Special Correspondent.)

Big Four.—A vein of copper-bearing ore has been encountered in this claim, in Deadwood Gulch, owned by J. W. Dalby and associates.

Bullion.—Dr. H. H. Muggley, of Chicago, and Charles E. Whealan, of Madison, Wis., have bonded the Bullion Mine, in the Bear Butte District, near the Two Bears. Work will begin immediately.

Cleopatra.—The steam hoist plant is in place, and active work will begin sinking the main shaft to the lower ore contact. Superintendent R. B. Hughes will move to Spearfish from Rapid City, to be nearer the mine.

Dacy Shaft.—The diamond drill hole in this shaft, at Ragged Top, has reached a depth of about 1,000 ft. in a fine grained shale.

Gilt Edge.—It is stated that Minneapolis parties have taken an interest in the Gilt Edge mine and chlorination plant at Rapid City and will begin work immediately.

Ironsides.—Two shifts of men have been put to work in this old mine, in Carbonate Camp, which has been purchased by a party from Colorado Springs, through William Hall. Considerable sylvanite ore has been found in it. A shaft will be sunk deeper and the ore shoots thoroughly explored. The property was owned by Frank Bryant.

Last Chance.—It is reported that a large body of silicious ore has been discovered in this mine, owned by John N. Hawgood and located in the Bald Mountain district.

Pennington County.

(From Our Special Correspondent.)

Big Hit Mining Company.—The wood question has been settled by this company, and the concentrating plant has started up on ore from Bismarck Mine. About 80 men are employed.

Holy Terror.—The difficulty of getting wood from the Black Hills Forest Reserve has closed down the mine and mill several times. The two mills have again started up, with several thousand cords of wood contracted for.

The company has purchased the property of the Harney Hydraulic Mining Company, known as the Harney addition to Keystone, and right of way has been given the Burlington Company for its road.

Lucky Boy.—J. T. Jones, of Iron Mountain, Michigan, who has a bond on the Luck Boy and associate mining claims located across the gulch from the Holy Terror properties, will begin development work as soon as the Burlington Railway Company gets the new road into the camp.

Ranger Group.—J. A. Boggs, of Minneapolis, has bonded the Ranger group of claims in the Keystone district and will soon begin development.

Sunnyside.—This mine, near Hill City, has closed down on account of the large flow of water. The lowest workings are down 480 ft.

Tycoon Group.—This group of claims is being developed by Mr. Faulk, of Cedar Rapids, Ia. The group is located northwest of Keystone.

TENNESSEE.

Phosphate Mining.—Speculation is running riot in the Tennessee phosphate region and men who know little of mining and less of phosphates are taking up options on every piece of ground on which there is a suspicion of phosphate. Prices asked for options are often absurdly high. Three phosphate farms north of Columbia, containing approximately 500 acres, were optioned recently for about $50,000. Another place which was sold three years ago for $3,200, was optioned for $15,000. W. C. Tyndall, of Columbia, has given an option on 250 acres of his farm to Joseph Chapman and associates. A bill has been filed in chancery court at Columbia, to sell the Will Howard phosphate lands, at Mt. Pleasant. It was taken for debt about 10 years ago, for about $6,500. It is now thought that the property will bring something like $300,000. Phosphate rock has been discovered in the Seventh District of Davidson County, in the Rough Rock neighborhood. Still, the Virginia-Carolina Company of Richmond, Va., has purchased some valuable phosphate lands in Swan Creek, 4 miles east of Centerville.

UTAH.

(From Our Special Correspondent.)

Bullion and Ore Shipments.—During the week ending August 26th there were forwarded east from the different smelteries of the trust, 24 cars, or 971,833 lbs. lead-silver bullion; 1 car, or 41,092 lbs. copper bullion. In the same week the different camps shipped 57 cars, or 2,134,690 lbs. of ore out of the State for treatment. For the prior week, not previously reported, the shipments were 20 cars, or 813,351 lbs. lead-silver bullion; 2 cars, or 80,968 lbs. copper bullion and ore sent out of the state, 46 cars, or 2,000,300 lbs.

Juab County.

(From Our Special Correspondent.)

Tintic Shipments.—In the week ending August 26th there were forwarded from the 3 railroad stations of the district 71 cars of ore and 5 cars of concentrates. The ore shipments were: Grand Central, 12 cars; Gemini, 11 cars; Centennial-Eureka, 10 cars; Mammoth, 6 cars; Humbug and Uncle Sam, 6 cars; Swansea, 5 cars; Sunbeam, 4 cars; Godiva, 2 cars; Four Aces, 2 cars; Tintic Iron, 12 cars of hematite for flux. Bullion Beck sent forward 5 cars of concentrates.

El Rey.—Buckets have been changed for a cage, and sinking is resumed. At the 200 ft. level a cross-cut is being driven to tap the Elmer Ray vein—a choice producer in the camp's early days. Messrs. Ed. Loose and L. E. Riter are the chief owners in this close proposition.

May Day.—Manager Hunt states that the car of ore about to be shipped from the recent strike will be followed by others. The ore chute grows bigger with development. Lumber is ordered for a new shafthouse.

Shoebridge Bonanza.—Shaft is 425 ft. and is being sunk deeper. At 400-level a cross-cut is driven for the vein. In the early '70's, above 350 ft. depth, ore was mined which paid several hundred thousand dollars' profit and the old dumps have many tons of good concentrating mineral.

Showers Consolidated.—From 300-level mineral carrying 50% lead and over 40 oz. silver is mined. A cross vein about at right angles assays in copper, lead and gold. This is supposed to be the juncture of the Bowers and Showers veins.

Summit County.

(From Our Special Correspondent.)

Park City Shipments.—For the week of August 26th the shipments of smelter products marketed through the Mackintosh sampler aggregated 3,575,350 lbs., made up as follows: Daly West, crude, 1,089,125 lbs.; Silver King, concentrates, 804,855 lbs., crude, 708,560 lbs.; Ontario, crude, 629,490 lbs.; Anchor, concentrates, 206,330 lbs.; Feeney, concentrates, 136,990 lbs.

Tooele County.

(From Our Special Correspondent.)

De La Mar.—Prior to September 1st a shipment of bullion will be made. The August yield will be about $140,000. It is over a year since cyanide products were refined at home.

Geyser-Marion.—On August 26th a find of good grade cyaniding mineral was reported in West Geyser ground. It is in virgin territory and gives promise of supplying a large tonnage.

Snowstorm.—An examination is on foot for a transfer which, it is said, is almost certain to follow.

Sunshine.—Exploration progresses most satisfactorily. Considerable bodies of mineral have recently been opened which are said to give values equal to those of the Overland.

WASHINGTON.

Ferry County—Republic.

(From Our Special Correspondent.)

Agnes.—A prospect drift from the bottom of the 75 ft. shaft has been started.

Ben Hur.—The shaft is down 149 ft. in unusually hard ground.

Black Tail.—The drift from the tunnel has passed the point where it was expected to cut the big vein. The ground is hard.

Chico.—The shaft is down 60 ft.

Golden Lily.—The shaft is down 117 ft. and a cross-cut has started. It is expected to intersect the west vein by driving 30 ft., and the east vein 60 ft., more or less, further on.

Hit or Miss.—A new shaft, on the northwest corner of the claim, is down 40 ft.

Nob Hill.—A new shaft has started and is developing quartz that pans native gold and is said to run from $30 to $73 per ton.

San Poil.—The north drift from the No. 2 tunnel is in 256 ft. At 36 ft. from the breast a cross-cut passes east through the hanging wall, developing nothing of special value. The south drift is in 280 ft. At 45 ft. back from the breast a split occurs about 20 in. wide of quartz running off almost at a right angle from the footwall, which assays about $140 per ton, while the part of the vein running on the footwall assays only $12 per ton. An upraise has started where the split begins.

Tom Thumb.—The manager will allow no information to be given for publication, except that he is exploring to find how many veins are connected with the surface, and a drift is in 102 ft. on the vein on the 100 ft. level from the east shaft. The quartz is from 4 to 12 ft. wide, and the manger estimates the average value of it at $25 per ton.

Vulcan No. 1.—An option for purchase is held by a Seattle, Wash., syndicate that has had considerable stripping done on the surface to find a vein. One 5 ft. wide has been found, of which 10 in. is quartz and the balance talc and poryphyry. An incline shaft is down 17 ft. At 8 ft. a sample of the quartz assayed $5.16 in gold and $2 in silver per ton.

FOREIGN MINING NEWS.

CANADA.

British Columbia—West Kootenay District.

(From Our Special Correspondent.)

The labor question continues to reach a solution along the lines of expediency. Opinion as to the 8-hour legislation as enacted at the last session of the Provincial Legislature continues to be divided.

The Rossland Miners' Union has passed a resolution to the effect that no union miner shall work on contract in that camp, and at Silverton the Miners' Union has demanded that managers of the Mine Owners' Association give written promises to pay no less than $3.50 per day on contract work.

Rossland Ore Shipments, from January 1st to August 24th.—These amount to about 94,000 tons. The average weekly shipments do not yet reach the 5,000 mark.

Athabasca.—This Nelson company recently purchased a duplicate of the plant sold to the St. Eugene, which, however, is to be driven by water power.

Black Bear.—Within a few feet of the mouth of the Black Bear tunnel and within 150 ft. of the big Le Roi compressor, considerable ledge was exposed while building a wagon road. C. C. Woodhouse, who has examined this ledge, says it has the dip and strike of the main ledge of the Le Roi and that the ore is of shipping value. The ledge was known to be there by the late Capt. Hall, and the future development is part of the system which has been outlined by the Le Roi management.

British America Corporation.—The 900 ft. level in the Le Roi has been reached. Shipments of ore continue from the 700 and 800 ft. levels, and intermediate points. The Black Bear shaft is now down 600 ft., and it is to be deepened to the 700 ft. level. About 27 drills are at work.

The shaft at the Josie is nearing the 500 ft. level. The management is using the compressor on the ground and is erecting a new gallows frame to be 61 ft. high.

A station is being cut at the 400 ft. level of the No. 1, and extensive development is going on.

Nickel Plate.—Sinking in the new shaft to the 400 ft. level is in progress.

St. Eugene.—The Rand Drill Company recently sold this mine a 10-drill duplex compressor with a full complement of drills, also a hoist, etc.

Nova Scotia—Cape Breton.

Dominion Coal Company.—The fire in the Caledonia pit is reported to be practically out and the mine is producing 1,500 tons daily. About 4,000 men are employed by the company at present, and coal is said to be leaving the International pier at an average rate of 9,000 tons per day. On one day recently 11,645 tons were shipped. The new pier adjoining the original one is a model in every way, and plans are being formed to build another.

Nova Scotia—Guysboro County.

(From Our Special Correspondent.)

Blue Nose Mining Company.—This company's mill, Sherbrook District, returns for July 330 oz. gold from 1,003 tons rock. The mine is being put in first class working order by a thorough system of development work.

Crow's Nest.—This mill, in Sherbrook District, returned 33 oz. from 650 tons of rock, a remarkably small yield; yet the owner claims that the large body of ore and exceptional facilities for working enable him to make ends meet.

Economy Mining and Milling Company.—This company returned 238 oz. from 410 tons of ore.

Forest Hill District.—Late returns from the Hermitage Mill, owned by James Purvis, show 239 oz. of gold from 1,265 tons of ore milled. George McNaughton returns 137 oz. gold from 590 tons ore from the Sweet Mill.

The Modstock Mine is producing largely as usual. The district is likely to be consolidated and fall into the hands of the wealthy syndicate that recently purchased the Modstock.

Hurricane Point.—This mine, in Stormout District, returned for July 186 oz. gold from 240 tons of rock.

New Glasgow.—This mine, in Sherbrook District, produced 373 tons of ore which yielded 65 oz. in July.

Richardson.—This mine, at Isaacs Harbor, has recently returned 240 oz. from 2,100 tons of ore. The mine has been running for the past 4 years, milling from 1,500 to 2,400 tons per month; recently the owners put in a Wilfly concentrator and found they got 5% of their tonnage in concentrates, two 25-ton shipments of which to Swansey, Eng., gave a net profit per ton of $38. Thus they have been permitting to go to waste as much gold as they were obtaining by free milling.

Nova Scotia—Halifax County.

(From Our Special Correspondent.)

Gold mining never looked as well in the Province as at present.

Blockhouse.—A 14 days' run of the new 10-stamp mill gave 102 oz. gold.

Brookfield Mining Company.—The company's mill in Brookfield District has recently returned 996 2/5 oz. from 2,665 tons of ore. Very rich ore has recently been struck in the lower levels.

Oldham Gold Mining Company.—The company's mill in Oldham District returns for July 309 oz. of gold from 499 tons of rock.

Guffey Jennings.—This mine, in Caribou District, is developing up beyond the most sanguine expectations of its owners. From the main shaft, which is 500 ft. deep, levels have been driven 400 ft. each way on the vein, which varies from 1 ft. to 8 ft. wide. The tests of ore are highly satisfactory. The company is preparing to sink another 500 ft., and is also about to erect a large modern milling plant at the pit head.

Lake Catcha.—F. B. Neily's mine in Lake Catcha District, returns 124 oz. from 170 tons. This ore has been obtained entirely in sinking the main shaft and yielded a net profit of $1,000 for July. The shaft is now 100 ft. deep and the vein of ore is 6 feet wide.

McManus.—This mill, at Harrigan Cove, returns for the month 66 oz. from 90 tons.

S. S. Lowes.—This mill, at Wine Harbor, returns 162 oz. from 45 tons of ore milled.

Ontario—Rat Portage District.

Burley.—It is reported that work will shortly be resumed on the main shaft where the Sultana vein has been cut and carries in places $360 in gold.

Combine Gold Mines.—This company has been developing its property, in Camp Bay, containing 557 acres, for the last 10 months. There are 11 veins on the property and the ore carries about $12 gold per ton. A 10-stamp Fraser & Chalmers mill, 980-lb. stamps, is being erected on Crow Lake and a railway is being built 2 miles, to carry the ore from the mine to the mill.

Hay Island.—Work has resumed on the main shaft and begun on another lode.

Mikado.—The return for July is 754 ozs. gold from 1,100 tons. It is expected the company will declare a dividend at the next general meeting. The property has been under development since 1896.

Rainy River Gold Mining Company.—The first general meeting of the company was held in Rat Portage. During the year 50 locations containing 3,000 acres, have been acquired. Work at present is confined to surface prospecting.

Regina.—Work has been suspended pending arrangements in London for further capital.

Sabaskong Mining Company.—This company, of which Jas. Coumee is president, has begun work on its property, containing 2,400 acres, in Bald Indian Bay, on Indian Reserve, 38B, 9 miles from Rat Portage. The capital of the company is $125,000.

Triggs.—The main shaft is now down 150 ft. and Captain Triggs states that he has a body of ore 40 ft. wide, carrying $6 gold per ton. The company owns 280 acres on Gi-bi Lake, East of Witch Bay, and recently bought from a Glasgow syndicate for $10,000 2 adjoining locations—McA 130 and McA 134. Captain Triggs is the manager and F. D. Sargent president of the company.

Ontario—Thunder Bay District.

(From Our Special Correspondent.)

There is much excitement in copper, zinc and iron lands. The exploratory work of the American iron masters on the Atikokan range, the recent sale of the Rossport zinc mine, and the search for copper elsewhere, have all stimulated interest. Some 800 acres have been taken for copper near Thunder Bay, and copper explorations are in progress to the west in the Shebandowan by Jas. Hammond, of Fort William, Ont., A. E. Morris, of Perth, Ont., and others.

It is reported that the rich leads in the West End Silver Mountain Mine, from which the Wileys of Port Arthur, Ont., shipped over 8,000 oz. per month the past season, have pinched out.

Quebec.

Owners of mica mines in the rich mica deposit of Ottawa County, Quebec, recently called upon the Provincial Attorney General to have an inquiry made into extensive thefts that have been made from the properties. It is alleged that thousands of dollars' worth of mica in excess of the admitted output of the mines now working have been brought to Ottawa and sent to the United States for electrical plants. Systematic mica-stealing has been conducted on a large scale.

MEXICO.

Sonora.

(From Our Special Correspondent.)

James Shirley and William Vanderbilt are suing George Mitchell, late of Jerome, Ariz., for $125,000, which they claim as their share from the recent sale of the Cobre Grande property. They have got an order restraining him from handling his profits until settlement of the suit.

Copete.—The sale of this copper mine in Sonora has been declared off by the vendors, Melczer & Hardwick of Phoenix, Ariz. The Yaqui outbreak is responsible for this.

COAL TRADE REVIEW.

New York Sept. 1.

Anthracite.

The hard coal trade is taking on wholesome activity in the West, but remains dull and sluggish in the East. With vessels on the Lakes so busy that they do not care to carry coal as a return cargo for 50c. a ton from Buffalo to Duluth, any one can see that coal in the Northwest is going to be higher than it is now before next spring. As a result, dealers in Chicago territory are hastening to put in stocks and the movement from the receiving docks is heavy. Prices have been advanced 25c. a ton and buyers put up their money and take the coal.

At the head of the Lakes much the same condition prevails. Orders are coming in fast and supplies on docks are none too heavy. Coal men have been waiting to see if there wasn't a possibility of Lake freight rates falling toward the close of the season. Now they are confronted with an advance, no one can say how big, and are stocking up. Receipts to date, on account of higher freight rates, are considerable less than to same date last year. In the East, coal continues to go into stock at tidewater points.

Consumers and dealers, remembering how prices have slumped in past seasons, are waiting to see if the producers will hold faith with each other. There is continued talk of cut prices, and no doubt coal is changing hands at below circular figures, as it has all summer. Still, the general tone of the market is firm and sales agents are sanguine.

We quote free burning white ash f. o. b. New York, at unchanged figures, as follows: Stove and nut, $4; egg, $3.75; broken, $3.40; pea, $2.20@$2.35; buckwheat, $1.75@$2.20; rice, $1.35@$1.70.

Bituminous.

The seaboard soft coal trade continues just about as active as it has been. The short supply of cars at the collieries continues to bother shippers, and remains the chief hindrance to increasing the output. The movement to points beyond Cape Cod and along Long Island Sound show little decrease. The receipts at Boston are about equal to those up to this date last year. Transportation from mines to tide is good, as the railroad companies are continually pressed for cars and expedite movements as much as possible. The coastwise vessel market is pretty firm. The recent storm shook up some of the carrying fleet, but it is probable that

shippers with prompt loading to offer can, at certain ports at least, get a discount from the prevailing ocean freight rates. These from Philadelphia to Boston, Salem and Portland are 85c.; Providence, New Bedford and the Sound, 75c.

Coal for immediate delivery is not easy to find and commands a 20c. bonus. We continue to quote for regular business: $1.65 for Clearfield at Philadelphia, Georges Creek at Baltimore, New River at Newport News and Pocahontas at Norfolk. Poorest grades at Philadelphia are $1.40. At New York, best grades are $2.10; poorest, $1.70.

Birmingham, Ala. Aug. 28.

(From Our Special Correspondent.)

The coal mines are working full time except at Brookwood, in Tuskaloosa County, and there are no anticipations of a change. The Walker County mines continue to ship down the Mississippi River to the Louisiana markets, while the Jefferson, Bibb, Shelby County mines, are supplying the local and domestic trade.

Domestic coal brings a better price and all indications point to the prices being sustained through the coming winter. According to the statement of State Mine Inspector J. de B. Hooper, the general condition of the mines in the state is first class.

Chicago. Aug. 29.

(From Our Special Correspondent.)

Anthracite Coal.—Dealers, both large and small, have been free buyers during the week, a large aggregate tonnage having been disposed of. There is plenty of spirit in the market, and the coming months have every indication of great and continued activity. There is a considerable inquiry, dealers being anxious to know the state of the market into the coming month, but it is understood that no contracts are being made at present prices for September delivery. Freight rates by lake are advancing, and the scarcity of cars on the railroads is noticeable. The tonnage of hard coal coming to town is very much below figures of last year for the month of August. September circular is likely to be 25c. higher, present shippers' prices being $5 for broken and $5.25 for domestic sizes.

The bituminous coal situation is fine, buying being general, with a noticeable number of large sales. Manufacturing concerns and railroads were never heavier buyers than at present, and the big demand has caused prices to stiffen, and is likely to send them higher. The shortage of miners at the mines and the shortage of cars among the soft coal carrying roads has caused a decided decrease in the tonnage received at Chicago. The situation was never better for soft coal, and the coming months bid fair to surpass anything on record. Some soft coal prices are: Pittsburg, $2.50; Brazil block, $2.10@$2.15; Hocking, $2.20@$2.25; Youghiogheny, $2.40@$2.50; Blossburg, $3@$3.10.

Coke is in great demand, the supply not being nearly large enough. Prices are very firm.

Pittsburg. Aug. 30.

(From Our Special Correspondent.)

An unusual demand for coal is the result of the announcement that the railroad coal combination will take charge of the mines, or rather that all mines will be worked on account of the Pittsburg Coal Company, after September 1st. As soon as the titles to the properties taken in by the combination are examined the deal will be closed and officers will be elected. All subscribers of stock have been notified to close their books up to August 31st. The stock has all been taken. The river trade is dull, as there is no water to move the loaded craft. There are about 20,000,000 bu. of coal ready to go out on the first rise. Some of the river coal operators are doing a large local trade supplying the mills with fuel.

Connellsville Coke.—The output is being curtailed somewhat by the lack of cars at a number of plants, but the demand is steady and strong. An advance in prices of foundry coke, making it the same as furnace coke, was reported this week, but it was denied by the representative of the H. C. Frick Coke Company, who said his company had made no advance. The estimated production last week was 191,059 tons, as compared with 192,036 tons the week previous. The shipments aggregated 10,839 cars, distributed as follows: To Pittsburg and river tipples, 3,336 cars; to points east of Connellsville, 1,870 cars; to points west of Pittsburg, 5,633 cars. This is a decrease of 668 cars compared with the previous week.

Shanghai, China. July 24.

Coal.—Considerable quantities of good lump coal have been settled in Japan at very much below present prices, and consumers therefore anticipate a reduction in quotations, and Japan dust coal has also been contracted for at much cheaper figures than last year's settlements. Nothing doing in Cardiff except among naval contractors. The natives are checking their cut-throat policy in Sydney Wollongong coal. Arrivals of all kinds of coal during the fortnight aggregated 21,571 tons. Quotations are, per ton, as follows: Welsh Cardiff, 13.50 taels; Sydney Wollongong, steamer cargo, 11.50 taels, and other sorts, 5.75@6 taels; Japan, all contracted for; Chinese, lump, 7 taels; dust, 5.60 taels; mixed, 5.60@6.50 taels.

Kerosene Oil.—Business in American oil has been confined to dealings between importers and natives, considerable quantities having been placed during the fortnight at 1.83@1.85 taels per case, less 2%, and the market closes firm at the latter figure. Teashop business is dull, and small sales among natives were made up to 1.80½ taels. Arrivals were 248,700 cases, making stocks 1,053,947 cases. Devoe's and Russian Batum show little interest. Importers are asking 1.70 taels, less 2%. Stocks are 335,650 cases, while deliveries during the fortnight amounted to about 100,000 cases. Nothing doing in Sumatra Langkat, and importers are asking 1.70 taels per two tins. Arrival of 75,000 cases is noted. Stocks are 75,000 cases. We quote: American Devoe's, 1.81 taels per case; Russian Batum Chop, 1.62½@1.65 taels per case, and bulk oil, 1.62½ taels per two tins; Sumatra Langkat, 1.62½ taels per two tins.

SLATE TRADE REVIEW.

New York. Sept. 1.

Roofing slate is in good demand, but supplies are somewhat less than demand, notwithstanding the increasing production. Prices are more stable than a year ago. The shipments for the first three weeks in August from Slatington, Walnutport and Danielsville in Pennsylvania amounted to nearly 16,000 squares, mostly for home consumption. The movement of blackboards aggregated about 3,000 crates, while school slates are estimated at 1,200 cases. Mill stock is also in better request. Continued competition with Vermont marble and other stone for ornamental purposes has affected the market for marbleized slate. The electric concerns are buying slate in good quantities, most of these deliveries being on contract.

In export circles trade is quiet, as shippers cannot get the slate they want. Of the shipments in August, Great Britain and Australia took the most roofing slate. Some billiard slabs were sent to London, while school slates have gone principally to Australia and Africa, with an occasional lot to Central America. Freight rates are practically unchanged from last week.

We understand efforts are again being made in the East to market Southern slate property. It is claimed that the quantity of slate available is unlimited, labor 80c. to $1 per day, with water transportation within 2 miles of quarry. The slate, it is also claimed, can be quarried and shipped at $2 per square less than any Pennsylvania slate and can be laid down by water in most of the Southern cities, and St. Paul, St. Louis and Cincinnati, at $2@$2.25 per square net.

The list of prices per square for No. 1 slate standard branch f. o. b. at quarries is given below:

Prices of Roofing Slate.

Size, inches	Monson or Br'n ville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Lehigh.	Peach Bottom.	Sea Gr'n.	Unfad'g Green.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14	6.10	3.50	3.00	3.35	3.40	4.85	3.00	.....	.....
24 x 12	6.60	3.50	3.00	3.35	3.40	5.00	3.00	3.75	.....
22 x 12	6.60	3.50	3.25	3.50	..	5.00	3.00	3.75	.....
22 x 11	6.50	3.75	3.25	3.50	3.40	5.00	3.00	4.00	.....
20 x 12	6 90	3.75	.....	3 50	3.40	5.00	3.00	3.75	.....
20 x 11	6.80	.....	.....	4 00	..	5.00	3.00	.....	.....
20 x 10	6.80	4.50	3.50	4.00	3.75	5.10	3.25	4.25	9@10½
18 x 12	6.80	3.75	.....	3.50	....	....	3.00	3.50	.....
18 x 11	7.00	....	....	....	..	...	3.00	3.75	.....
18 x 10	7.20	4.50	3.50	4.00	3.75	....	3.00	4.00	9@10½
18 x 9	7.10	4.50	3.50	4.00	3.75	5.10	3.00	4 25	9@10½
16 x 12	6.80	3.75	....	3.50	....	.....	2.85	3.50	.....
16 x 10	7.10	4.25	3.50	4.00	3.75	5.00	2.85	4.00	9@10½
16 x 9	7.00	4.25	.....	4.00	3.75	5.10	2.85	4.25	9@10½
16 x 8	7.20	4 50	3.50	4.00	3.75	5.10	2.85	4.25	9@10½
14 x 10	6 60	3.75	3.25	3.35	....	5 00	2.75	3.75	9@10½
14 x 9	6.50	....	....	....	....	....	2.75	3.75	9@10½
14 x 8	6 60	3.75	3.25	3.35	3.40	4.85	2.75	4.25	9@10½
14 x 7	6.40	3.75	3.25	3.35	3.40	4.85	2.50	4.25	9@10½
12 x 10	5.80	....	....	....	.....	...	2.50	3.25	.....
12 x 9	5.60	....	.....	.....	.....	....	2.50	3.25	.....
12 x 8	5.50	3.50	.....	3.35	3.25	4 60	2.50	3.50	8¼@9
12 x 7	5.00	3.25	.....	3.35	3.25	4.60	2.50	3.50	8¼@9
12 x 6	4.80	3 25	..	3.35	3.25	4.50	.....	3 50	8¼@8½

A square of slate is 100 sq. ft. as laid on the roof.

In Brownville and Monson delivery quotations can be had somewhat lower than above, which is also true of other brands. No. 1 Bangor are 50c. extra when full 3/16 in. thick, and Peach Bottom 25c. extra per square. Intermediate sea green, $2.25@$2.45 per square, according to size.

CHEMICALS AND MINERALS

(For further prices of chemicals, minerals and rare elements, see page 300.)

New York. Sept. 1.

Heavy Chemicals.—Alkali, domestic high test, is being contracted for delivery to 1901 at 70c. per 100 lbs. in bags, f. o. b. works, and some orders are reported taken at 75c. over next fire. From second hands we hear further sales at 80@90c. f. o. b. works for immediate delivery. Foreign alkali is unchanged. Domestic caustic soda, high test, has been booked over next year at $1.60 per 100 lbs. f. o. b. works. Sal soda, owing to the persistent Western competition, is now cheaper, and may recede still further. Bicarb. soda stocks are limited for prompt shipment. Bleaching powder of prime grades is small in stock, while demand is good. The agents for the United Alkali Company are not offering bleaching powder for arrival until late in September. Chlorate of potash, powdered, is in better request, while crystals are quiet. Imports of bleaching powder this week at New York were 231 bbls. and 50 casks from Antwerp, and 119 casks from England. We note also the receipt of 15 bbls. domestic bleach at this port. The receipts of domestic alkali and caustic soda were small, 380 sacks and 65 bbls. and 200 drums respectively.

Articles.	Domestic.		Foreign.
	F.o.b. Works.	In New York.	In New York.
Alkali, in bags.	70@72½c.	80@85c.	80@85c.
Caustic Soda, high test	$1.55@$1.60	$1.65@$1.70	$1.60@$1.70
98% powd.	.....	2 75@ 3.00	.. ..
60@74 % powd.	.....	2.12½@ 2.25	....
Sal Soda	60@65c.	....	65@67½
" conc.	1.35@1.60	....	1.60@1.65
Bicarb. Soda	1.12½@1.25	.....	2.12½@2.25
" extra	3.25@3.50	.....	
Bleach. Pdr., Eng. prime	.....	....	1.50@1.65
other br'nds.	....	....	1.40@1.50
Chl. Pot cryst	.. ..	9.00@9.25	9.25@9.37½
" powd.	....	9.50@9.75	9.75@10.00

Prices are generally for large quantities, and in many cases depend upon make, test and package.

Acids.—No improvement in demand, other than for sulphuric acid on export account. Blue vitriol is featureless. Prices unchanged. Imports were 35 casks oxalic acid for which there is the usual jobbing demand.

Quotations are in large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified.

Acetic, com. No. 8.	$1.50	Nitric, 38°	$3.75@ 3.80
Blue Vitriol, best	5.25	Nitric, 40°	4.00@ 4.05
Chamber, 50°, ton	11.50@12.00	Nitric, 42°	4.62@ 4.65
Muriatic, 15°	1.50@ 1.60	Oxalic	6.25
Muriatic, 20°	1.25@ 1.30	Sulphuric, 66°	1.10@ 1.15
Muriatic, 22°	1.40@ 1.50	Sulphurous, 100%	
Nitric, 36°	3.50@ 3.55	SO_2 anhydrous	8.00@10.00

Brimstone.—Arrivals noted amounting to 1,900 tons. On spot best unmixed seconds are obtainable at $21.50@$22, and shipments at $20.50@$20.75 per ton. Thirds about $2 less. Stocks in Sicily are accumulating. On August 1st they were 214,148 long tons, against 209,307 tons on July 1st, and 149,443 tons on August 1st, 1898. The exports from Sicily in July are reported at 30,268 long tons, against 25,899 tons in the same month last year. The shipments to the United States were 5,950 tons best unmixed seconds, and 4,250 tons best thirds, total, 10,200 tons, against 7,670 tons in July last year. Largely increased shipments were also noted to Italy, while France showed a decrease of about 6,000 tons from July of last year.

Pyrites.—Demand continues good, but some trouble is caused by the scarcity of freight room from the mines. Prices are unchanged. A charter of 1,062 tons is noted from Huelva to Wilmington, Del., at 10s. 9d. We quote American pyrites as follows: Mineral City, Va., lump ores, $3.25 per long ton (basis 42%), and fines, $3; Charlemont, Mass., lump, $5.50, and fines, $4.75; Pilley's Island, lump, $6.50, and fines, $4.50 per long ton, delivered in New York. Spanish pyrites, 12@14c. per unit, according to percentage of sulphur contents, delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46% to 51% of sulphur; American, 42% to 44%, and Pilley's Island, N. F., 50%.

Fertilizing Chemicals.—The market for the leading ammoniates shows some improvement, but buyers still expect lower prices. Offerings of blood and tankage by Western packers are light. Sulphate of ammonia gas for October shipment is reported sold at $3.10 per 100 lbs., while orders for September delivery have been booked at

Articles.	F. o. b. Wks.	In N. Y.
Potash, muriate, 80@85%	....	$1.78
" " 95%	.....	1.81
" sulphate, 90%	.....	1 98½
" " 96%	....	2.10½
" d'ble m're salt, 48@53%	....	66c.
" " " " 30%	....	89c.
" kainit, 12.4%	.....	8.70@8.95
" sylvanit	....	37@38c.
Sulph. Am., gas (25%)	.....	3.12½@3.15
" " bone	....	3.00@3.05
Blood, dried, h-gr, Chi.	$1.80@1.82½	.....
" " " N.Y.		1.85
Azotine	1.75@1.80	1.80@ 1.85
Bone black, diss., 17@18%	.... ..	16.00@16.50
Fish scrap, acid	10.50@11.00	12 50
" dried	19.50@20	21 50
Tankage h. gr., Chicago	15.00@15.50	21.00
" concentrated	1.45@1.50	1.90@1.95
" bone	.....	20.00@21.00
Bone, ground	... .	23.50@25.00

The quotations on potash are on the basis of foreign invoice weights, tares and analysis, in quantities of not less than 500 tons bulk salts or 50 tons concentrated salts.

$3.12½. Spot goods are scarce. Of potash salts we imported this week 16,000 bags muriate and 500 bags sulphate of potash. We also imported 764 bags sulphate of ammonia. Reports are current that the American Agricultural Chemical Company will not exercise the option on the stock of the Bowker Fertilizer Company at $125 per share, as the appraisal of that company's plant and assets do not justify it. The Bowker Company handles about 30,000 tons of fertilizers yearly, while the American Agricultural Chemical Company controls about 800,000 tons. All the factories of this combine it is said are working to their full capacity, and shipments are being made to Western factories so that the latter can keep up with their orders.

Nitrate of Soda.—No perceptible change in this market. Spot goods are quoted $1.60 per 100 lbs., and shipments, $1.62½@$1.65. Some interest has been shown abroad in the proposed nitrate selling syndicate to which producers will consign their output to a certain firm in London. The concern is to help to capitalize, selling agencies or syndicates in all the chief centers of consumption, with which contracts will be made subject to the approval of the producers. The Chilian producers will have a special committee in London, which will take counsel with the firm in the matter of production. For the first year this will be restricted to 29,000,000 qtls. (of 101 lbs. each), the succeeding years being controlled by the consumption during the previous year. It is proposed that this arrangement shall be adhered to for 4 years as a minimum, with power to extend it to 5 years.

Phosphates.—In Florida the rainy season is interfering with production, and shipments of rock last month are reported to be lower than some time previous. In the pebble fields the Virginia-Carolina Chemical Company is endeavoring to get control of the different mines, about 15 in number. This concern lately purchased the Dunnellon Phosphate Company and the Peace River Phosphate Mining Company. We are advised that the shipments of rock over the Plant System in July amounted to 63,752 tons from Florida and 10,849 tons from South Carolina. Abroad the demand for Florida phosphates is limited by the high prices, which are now quoted 9¼d. per unit for 77@80% rock, all positions to 1901; 8d. for 68@73% land pebble, and 7½d. for 58@63% Peace River, all c. i. f. United Kingdom or North Sea ports. Tennessee phosphates are in better request, while production is growing in consequence of new discoveries. The shipments from Centreville and Twomey in Hickman County in June were 3,892 long tons, of which only 824 tons went to the middle West, the remainder going South. Abroad they are quoting 78@80% Tennessee rock at 7¼d. per unit, c. i. f. United Kingdom or North Sea ports. In South Carolina phosphate rock is firm in price and shows a good demand. The stocks of land rock are limited, and it is reported local manufacturers have made contracts for some time to come. In July the shipments from Charleston, S. C., were 7,332 tons domestic and 764 tons foreign (Tennessee rock, to Germany); total, 8,096 tons, against 8,704 tons last year, and 5,720 tons in July, 1897. Concerning the Algerian phosphate industry we learn that the shipments from Bone in June were 17,250 tons. The Algerian 63@70% rock is quoted at 7¼d. per unit, and the 58@63% at 6¾d., c. i. f. United Kingdom and North Sea ports.

We quote: Florida high grade, 75@80% rock, $10 per long ton f. o. b. Fernandina. The freight rate to New York is about $2 per ton. Florida land pebble, 68@73%, $7@$7.50 per ton, delivered in New York. Florida Peace River rock, 58@63%, $4.50 per ton f. o. b. Punta Gorda. South Carolina, crude rock, $4.25@$4.50; hot-air dried, $4.50@$5 per long ton f. o. b. Fetteressa, S. C. Tennessee phosphate rock, $4 f. o. b. mines for export, guaranteed 75% bone phosphate of lime and 3@4% iron and alumina (ex-vessel New York, $9@$10); and $2.50@$2.75 f. o. b. for mixed blue-gray Hickman County rock, guaranteed 65% bone phosphate, and not over 3% iron and alumina. The difference in the price of this phosphate and Florida high grade is owing to the higher percentage of iron and alumina in the Tennessee rock. Concentrated phosphates, 13@15% av., P_2O_5 60@62½c. per unit at sellers' works. Acid phosphates, $6.25 per ton for 14% in bulk f. o. b. Charleston, S. C.

Liverpool. Aug. 24

(Special Report of Joseph P. Brunner & Co.)

There is a buoyant tone in heavy chemicals, and makers report a good all round trade. Soda ash is in demand and American orders have recently been returned unfilled, makers declining to quote at present for that market. Quotations depend upon export market, the maximum range for tierces being about as follows: Leblanc ash, 40%, £4 5s.@£4 10s; 58%, £4 10s.@£4 15s. per ton net cash. Ammonia ash, 48%, £4@£4 5s; 58%, £4 5s.@£4 10s. per ton net cash. Bags are 5s. per ton under price for tierces. Soda crystals move off freely at £2 17s. 6d. per ton, less 5% for barrels, or 7s. less if taken in bags. Caustic soda is in request in spite of the recent advance, and as most makers are well sold, buyers have some difficulty in filling prompt orders. Present spot and forward quotations are as follows: 60%, £7; 70%, £8; 74%, £8 10s; 76%, £8 15s. per ton net cash.

Bleaching powder is not active, but the recent advance is maintained, £5 per ton net cash being nearest value for hardwood packages, while outside make is very scarce, two outside works having shut down their plants.

Chlorate of potash is slow, but prices are nominally unchanged at 3½@3⅝d. per lb. for crystals and 3⅝@3¾d. per lb. for powdered, as to quantity. For round lots the lower figures could probably be shaded, but there is so little business passing that it is difficult to test the market.

Bicarb. soda is selling at varying prices, according to destination, ranging from £5 5s@£6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia is a shade easier, if anything, at £12 12s. 6d@£12 15s. per ton, less 2½% for good gray 24@25% in double bags f. o. b. here, but there is not much offering.

Nitrate of soda is quiet at £7 15s@£8 per ton, less 2½% for ordinary quality in double bags f. o. b. here, while refined is scarce and held for £8 5s.

IRON MARKET REVIEW.

NEW YORK, Sept. 1, 1899.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending Sept. 2, 1898.		Week ending Sept. 1, 1899.		From Jan., '98.	From Jan., '99.
	F'ces.	Tons.	F'ces.	Tons.	Tons	Tons.
An' racite	25	16,750	42	37,125	788,686	1,008,293
Coke.....	140	184,775	180	225,275	6,859,596	7,501,004
Charcoal.	22	6,625	22	6,275	204,029	184,848
Totals..	187	208,150	244	268,675	7,852,311	8,694,145

There is no let-up in the demand for all forms of iron and prices, that were thought by producers plenty high enough, are being forced still higher by consumers, big and little. Manufacturing concerns all over the country see work for months ahead, and the impression is growing that barring disturbed business conditions on account of a presidential election, prices are likely to hold their present level over 1900. Yet it is likely that many manufacturers of finished products will be unable to duplicate their profits on the last half of this season's business. Concerns which bought pig enough last fall to carry them through this year are having a great harvest. Next year ore will certainly be higher. Labor will ask larger returns. It is reported that Lake Superior ores at Cleveland may sell at an advance of $1.50 over this spring's figures. The mining companies are making enormous outputs, but Lake freights down the Lakes are now $1 higher than this spring, and are likely to go higher yet.

At Pittsburgh pig iron has advanced, Bessemer being now quoted as high as $23.25. Transactions in billets are limited, and open-hearth steel is up to $50. In the East, Southern foundry is up to $16 for No. 2 at furnace, with No. 1 $17, and both grades very firmly held; these prices being for delivery into next year. Orders for 20,000 tons of steel rails have been placed during the week, at prices not stated. Plate and sheet mills continue overloaded with orders, and prices are likely to go still higher.

Birmingham Ala. Aug. 28.

(From Our Special Correspondent.)

Pig iron quotations have been looking up, and in some quarters it is reported that $17 per ton is asked for No. 1 foundry. There is considerable iron changing hands, and furnacemen admit that shipments will continue some time into next year. Pig is higher for immediate delivery or anything like immediate delivery, but with orders taking their turn current prices prevail. Purchasers are not expecting any reductions as they did a year or so ago in giving a good sized order. The furnaces are not refusing any orders at current prices, if enough time to deliver them is given.

There are no indications of a cessation in the production for some time to come. The furnacemen say they only doubt their ability to keep the production up. An official of a large concern has expressed some fear as to whether there would be sufficient cheap labor in the district during the entire winter. So far there has been but little trouble, but the negro is always ready to move from one job to another, and as cotton gathering approaches these fears increase. Outside of this the furnacemen apprehend no trouble whatever.

Indications point to a larger output by December. One or two furnaces go into blast about Birmingham district in the next few weeks, but others will go out of blast.

The following are the quotations: No. 1 foundry, $16@$17; No. 2 foundry, $15@$15.50; No. 3 foundry, $14.50@$15; No. 4 foundry, $14; gray forge, $13.50; No. 1 soft, $16@$17; No. 2 soft, $15.25@$15.50.

Finished iron remains active and the rolling mills are working hard to keep up, but are still unable to get all the hands they desire. The trip of bosses to Pennsylvania, Ohio and Kentucky after skilled men resulted in but a few men coming here.

Announcement is made of the purchase of options on the old steel plant at North Birmingham, known as the Jefferson Steel and Manufacturing Company, and the Sheffield, Ala., rolling mills by the Union Steel and Chain Company. The plant at North Birmingham has not been in operation for some time. It was formerly the Henderson steel plant and made the first steel in the Birmingham District.

Buffalo, N. Y. Aug. 9.

(Special Report of Rogers, Brown & Co.)

The market continues to show the same strength and firmness as has been noted for some months past. Orders and inquiries for delivery during the first half of next year continue in considerable volume. We quote for cash f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $21.50@$22.50; No. 2, $20.50@$21.50; Ohio strong softener No. 1, $21.50@$22.50; No. 2, $21@$22; Jackson County silvery No. 1, $29; Southern soft No. 1, $21.50; No. 2, $20.50; Lake Superior charcoal, $23; coke malleable, $21@$22.

Cleveland, O. Aug. 30.

(From Our Special Correspondent.)

Iron Ore.—But little business was done in the ore market during the past week outside of hurrying up shipments from upper Lake ports. Company agents are chiefly concerned in placing on Lake Erie docks ores already sold, and will not sell more until much later in the season. In this connection there are reports that the selling of ores may begin late this fall or early in the winter. In addition to the above reports, there is talk to the effect that on next year's sales there will be an advance over this year's of about $1.50 per ton. It is quite certain that next year's sales will be lighter. A further advance in Lake carrying rates was paid during the week. The price now from the head of Lake Superior is $1.50 per ton, and the rate from Escanaba is $1.15.

Quotations are as follows: Specular and magnetic ores, Bessemer quality, $4@$4.25; specular and magnetic ores, non-Bessemer, $3.25@$3.75; red hematite ores, Bessemer quality, $3.75@$4.25; red hematite ores, non-Bessemer quality, $2.75@$3.25.

Pig Iron.—The pig iron market continues very strong, and has shown more activity than was reported a week ago. The demand is large and buyers are generally working in the direction of covering their wants for the first half of next year. Very little is being sold for immediate delivery or for delivery before the end of the year. The strong demand has forced prices still higher. The quotations f. o. b. Cleveland are as follows: Lake Superior charcoal, $23.50; Bessemer, $22; No. 1 foundry, $22; No. 2, $21.50; No. 1 Ohio Scotch, $21.50; No. 2, $21; gray forge, $18.25.

Philadelphia. Aug. 31.

(From Our Special Correspondent.)

Pig Iron.—The market is again advancing under inquiries from customers whom it was supposed had enough iron to see them through autumn. There are quite a number of small buyers who have decided they want iron and will have it. Some holders are quoting $23 for No. 1 X foundry, and $22 is a common figure for No. 2 X. The pig iron people are all talking about higher prices, and this makes them indifferent about selling now at any price. Gray forge would be taken at $18.50@$19, and there is not enough to be had at any price. There are buyers also of basic and Bessemer, but makers have again advanced prices.

Billets.—In the absence of supplies it is hard to say what a fair price is, but quotations are given at $40@$42. Some Eastern consumers are much worried over the billet situation. Muck bars were quoted at $34 to-day.

Merchant Iron.—The city offices report a revival of inquiry this week, from small customers chiefly. There will be a rush of business as soon as mill men show a sign. At present most of them are delaying. Common iron is 1.90c.; refined, 2.10c.; tested, 2.20c. Steel special, 2.20@2.30c.

Skelp.—Quotations are not given this week in view of the fact that large transactions are likely to go through in a few days.

Sheets.—The statements made by mill men last week were repeated this week. Prices are very firm. It is intimated 4c. may soon be asked for No. 28.

Pipes and Tubes.—No developments. The reports are that large contracts will be placed in September, but this grows out of the fact that inquiries for large lots have just been made; but up to to-day no assurances have been given as to delivery or price.

Merchant Steel.—Agents for mills are back at their desks and report that their instructions

from home offices do not allow them much chance to do business until the mill books are a little more cleared up. Besides, it is evident from what one or two say that all or most all grades of merchant steel will fetch more money next month.

Plate.—What has been said for two months was practically repeated to-day. Western mills would like Eastern mills to help them out. Eastern mills are obliged to book orders for remote delivery when they would rather not. Prices are threatening another upward movement.

Nails.—The cut nail manufacturers held a meeting August 22d, and advanced prices 25c.

Structural Material.—The advance of prices $5 per ton brought out several parties who concluded that as the makers advanced prices they were ready to accept business. This is not the case, although the office people report they are sending orders to mill every week.

Steel Rails.—Orders this week foot up 20,000 tons, part in light sections.

Old Rails.—There is a great stir to get old iron rails, and one quotation is $23.

Scrap.—The same applies to scrap. All consumers want scrap, and some recent sales show that buyers are making their own prices and saving the sellers the trouble.

Pittsburg. Aug. 30.

(From Our Special Correspondent.)

The general outlook in the iron and steel industry is very strong and with no indications of trade sagging off. It seems certain that the present high prices will hold through next year, but the markets could stand a slump and there would still be good profits in the business. Many furnace men have sold their product for at least 6 months of 1900, and at prices that were considered high this year. The first 2 or 3 months of 1900 will be needed to take care of the unfilled orders of 1899. Bessemer pig iron at Pittsburg has advanced slightly during the week, and is now quoted at $23@$23.25. Foundry iron has advanced in about the same ratio as Bessemer, and still higher prices are expected within a month. Bar iron is still advancing, and higher prices are quoted this week. An advance of at least $5 a ton for structural material was expected during the week, but was not made. Present prices are considered too low. The prices for sheets have stiffened considerably. Steel manufacturers are getting further behind in their orders. They are unable to make the full capacity of their mills owing to the shortage of pig iron. More sales for open hearth steel for next year are being made than for Bessemer. There is a premium on steel plates for early delivery, and one large concern is out of the market for this year. The manufacturers of cold-rolled and cold-drawn steel have rearranged prices to go into effect September 1st.

The discounts on carload lots of shafting were fixed at 27 and 20% on smaller lots. This is an increase of from $3 to $5 a ton. All the mills making steel shafting are filled with orders and are being operated to their fullest capacity.

The advance in tin plate announced early in the week has just been officially confirmed. Before the wage settlement in July the price of a box of 100-lb. coke plates was $3.87½. An advance of 50c. was made immediately after the settlement. A further advance of 27½c. has just been made, increasing the price to $4.65. The American Tin Plate Company has sold its output up to October 1st, but all sold after that date will be at the advanced figure. Owing to the sales made for future delivery the workers cannot claim an increase in wages under the sliding wage scale for two months at least.

Pig Iron.—Bessemer is quoted this week at $23@$23.25, but no sales are reported. It is said that at least $23 and $24 could be obtained if the iron could be had. Foundry iron is in as great demand as last week, but prices remain about the same. Gray forge is still quoted at $18.50@$18.75.

Steel.—Billets are from $37@$40. One sale is reported at $38. Very little steel is being sold for next year. Manufacturers do not want to sell until they complete the shipments of sales made for this year. Open hearth steel has again advanced and is now quoted at from $48 to $50. There is no change in the price of steel plates, except for prompt shipment.

Structural Material.—Beams and channels from 3 to 15 in. are 2.25c.; larger, 2.35c.; tees, 2.30c.; zees and angles, 2.25c.

Sheets.—There has been a slight advance, and the demand continues to be heavy. The minimum price for No. 28 gauge is 3.25c.

Bars.—Steel bars are slightly higher, and the minimum price is 2.25c. All muck bars are 2.15@2.30c.

New York. Sept. 1.

The volume of business increases as the vacation season wanes. In foreign trade we note shipments of $31,500 worth of steel rails, $12,000 worth of railroad couplers, and $10,700 worth of cut rails to Shanghai, China; $23,000 worth of manufactured iron, $15,700 worth of iron pipe to Yokohama, Japan; $43,000 worth manufactured iron to Australia with continued shipments of machinery, agricultural implements and hardware; $32,000 worth of machine tools, and $59,000 worth of mining machinery to Germany, and $45,000 worth of machinery and $20,000 worth of railroad material to Mexico.

Pig Iron.—The market continues to advance, and producers find a difficulty in supplying everybody at once. The Sloss-Sheffield Company announces a 50c. per ton advance. We quote for Northern brands, tidewater delivery: No. 1 X foundry, $22.50; No. 2, $21.75; No. 2 soft, $21.75; No. 2 plain, $20.75; Southern brands, New York delivery: No. 1 foundry, $22; No. 2 foundry, $21.25; No. 1 soft, $21.75; No. 2 soft, $21.25; No. 3, $20.25.

Bar Iron.—Prices are going higher. We quote refined iron 2.15c. in large lots on dock, and common, 2c.

Plates.—The market is very firm indeed, and an advance is prophesied. We quote at tidewater for large lots: Tank, ¼-in. and heavier, 2.85c.; tank, 3/16-in., 2.95c.; shell, 2.95c.; flange, 3c.; marine, 3.10c.; firebox, 3.20c.; universals, 2.75c.

Steel Rails.—Transactions in rails have showed some improvement, and prices are hardening. Quotations are supposed to be about $31@$32 for standard sections f. o. b. Eastern mills. Smaller rails are nominally quoted: 12-lb., $36; 16-lb., $36; 20-lb., $35; 30-lb., $34; 40-lb. to standard, $32, with the usual advance for small orders. Angle bars are 1.90c.; spikes, 2c., and bolts, 2.25c.

Structural Material.—Quotations for all kinds of structural material are rising. We quote for large lots at tidewater: Beams, 15-in., 2.30c.; tees, 2.40c.; channels, 2.30c.; angles, 2.35c.

Nails.—Demand continues good. Wire nails are quoted at $2.80 for large lots on dock; cut nails at $2.50.

METAL MARKET.

NEW YORK, September 1, 1899.

Gold and Silver.

Gold and Silver Exports and Imports
At all United States ports in June and year.

	July.		Year.	
	1898.	1899.	1898.	1899.
GOLD.				
Exports	$1,497,013	$2,587,457	$7,723,205	$30,140,781
Imports	2,641,668	2,895,469	95,238,664	26,283,116
Excess	I. $1,144,655	I. $308,012	I. $87,515,459	E. $3,857,665
SILVER.				
Exports	4,884 922	4,003,432	29,482,919	31,123,380
Imports	2,653,746	2,731,796	15,546,785	17,168,511
Excess	E. $2,231,176	E. $1,271,636	E. $13,936,134	E. $13,954,869

This statement includes the exports and imports at all United States ports, the figures being furnished by the Treasury Department.

Gold and Silver Exports and Imports, New York
For the week ending August 31st, 1899, and for years from January 1st, 1899, 1898, 1897, 1896.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k		$47,900	$402,925	$45,344	E. $309,601
1899..	11,550,513	8,139,906	18,227,793	2,306,661	E. 19,331,769
1898..	975,427	72,372,134	22,110,067	2,039,985	I. 51,326,625
1897..	28,059,646	3,974,093	25,729,551	1,461,553	E. 49,353,551
1896..	40,369,448	19,254,461	25,775,132	1,830,288	E. 45,059,831

There were no gold exports; the silver went chiefly to London. The imports were principally from Central and South America and the West Indies.

The United States Assay Office in New York reports the total receipts of silver at 226,000 oz. for the week.

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars	$ .48	$ .49
Peruvian soles and Chilean pesos	.42⅞	.46
Victoria sovereigns	4.85	4.89
Twenty francs	3.85	3.90
Twenty marks	4.74	4.80
Spanish 25 pesetas	4.78	4.84

Average Prices of Silver per oz. Troy.

Month.	1899.		1898.		1897.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.
January	27.42	59.36	26.29	56.77	29.74	64.79
February	27.44	59.42	25.89	56.0(	29.68	64.67
March	27.48	59.64	25.47	54.90	28.96	63.06
April	27.65	60.10	25.95	56.02	28.36	61.85
May	28.15	61.23	2[illegible] 31	56.98	27.86	60.42
June	27 77	60.43	27.09	58.61	27.58	60.10
July	27.71	60 26	27.32	59.06	27.36	59.61
August			27.48	59.54	24.93	54.19
September			28.05	60.68	25.66	55.¼
October			27.90	60.42	26.77	57.57
November			27.93	60.60	26.87	57.93
December			27.45	59.42	26.83	58.01
Year			26.76	58.26	27.55	59.79

The New York prices are per fine ounce; the London quotation is per standard ounce. 925 fine.

Imports and Exports of Metals.

Port.	Week, Aug. 30.		Year, 1899.	
	Expts.	Impts.	Expts.	Impts.
***New York.**				
Aluminum.....long tons	.....	.....	327	12
Antimony ore... " "	.....	.....	.....	1,109
" regulus.. " "	.....	165	.....	705
Brass ..... " "	11	.....	81	.....
Chrome ore..... " "	.....	.....	.....	1,988
Copper, fine..... " "	1,122	250	37,664	18,077
" matte.. " "	.....	45	556	768
" ore..... " "	.....	.....	.....	21,904
" ash..... " "	.....	15	.....	166
" sulphate " "	10	.....	11,413	.....
" other... " "	.....	.....	.....	90
Cop-nickel matte " "	.....	.....	.....	53
Ferro-mangan'se " "	.....	.....	15	178
Iron ore ..... " "	.....	.....	.....	50
" pig, bar, rod " "	128	.....	4,492	2,052
" pipe..... " "	163	.....	21,209	.....
" plates, sheets " "	.....	.....	712	15
" other..... " "	29	.....	1,144	.....
Lead..... " "	1,425	1,320	37,697	35,692
" ore.. ..... " "	.....	.....	.....	941
Manganese, ore. " "	.....	.....	.....	3.671
Metals, old scrap " "	.....	‡62	2,934	2,368
Composition.. " "	.....	‡75	5,157	146
Nails, ... " "	114	.....	13,359	.....
Nickel ..... " "	20	15	1,272	738
" Ore ..... " "	.....	.....	.....	4,020
§Railr'd material " "	.....	‡110	6,762	2,892
Rails, old..... " "	.....	.....	15,417	.....
Spiegeleisen..... " "	.....	.....	.....	362
Steel bars, plates " "	1,656	‡110	34,008	10,871
" rails..... " "	1,203	.....	42,825	155
" hoops..... " "	111	.....	614	.....
" wire..... " "	557	.....	24,636	950
" not speci'd. " "	154	‡24	24,233	9,887
Tin ..... " "	.....	765	.....	18,228
" dross or ashes " "	.....	.....	60	.....
" and black plates " "	.....	‡60	.....	22,439
Zinc..... " "	.....	.....	272	308
" dross..... " "	49	.....	395	.....
" ashes, skim " "	85	‡15	1,785	116
" ore..... " "	.....	.....	4	264
" oxide..... " "	107	.....	2,877	288
†Baltimore.				
Alumina .... bags	.....	.....	.....	3,479
Antimony regulus...casks	.....	34	.....	286
Chrome Ore.....long tons	.....	.....	11	.....
Copper, fine..... " "	380	.....	24,115	.....
" matte... " "	.....	.....	.....	.....
" sulphate " "	.....	.....	1,522	.....
" pipe..... " "	.....	.....	100	.....
Ferro-manganese " "	.....	.....	.....	1,737
Ferro-silicon..... " "	.....	.....	184	95
Iron pig, bar, etc. " "	.....	149	982	5,632
" ore..... " "	.....	3,346	.....	168,080
" pyrites..... " "	.....	.....	.....	41,007
Manganese ore.. " "	.....	.....	.....	32,202
Metals, scrap.... " "	.....	.....	4,604	14
Nails ..... " "	15	.....	548	.....
Pipe, iron & steel " "	49	.....	7,761	.....
Spiegeleisen..... " "	.....	.....	.....	843
Steel, bars, pl'es.. " "	253	.....	29,436	.....
" wire ..... " "	20	.....	861	.....
" rails..... " "	2,251	7	43,463	276
not specified.. " "	.....	.....	2,249	10
Tin..... " "	.....	.....	563	.....
" dross..... " "	.....	.....	.....	.....
" and blackplates " "	.....	41	.....	1,880
" other..... " "	.....	.....	43	.....
Zinc..... " "	.....	.....	25	5
" dross .. " "	.....	.....	212	.....
" skimmings.. " "	.....	.....	131	.....
***Philadelphia.**				
Antimony.....long tons	.....	.....	.....	10
Chrome ore..... " "	.....	.....	.....	1,770
Copper ore..... " "	.....	.....	.....	29,440
" old..... " "	.....	.....	.....	11
Ferro-manganese " "	.....	.....	.....	1,317
Ferro-silicon.... " "	.....	.....	.....	160
Iron, pig..... " "	.....	.....	.....	1,375
" ore..... " "	.....	‡10,147	.....	152,601
" pyrites..... " "	.....	.....	.....	5,250
Manganese ore.. " "	.....	.....	.....	53,187
Steel sheets..... " "	.....	.....	.....	510
Spiegeleisen..... " "	.....	.....	.....	1,770
Tin..... " "	.....	‡250	.....	810
" and black plates " "	.....	20	.....	2,642
Zinc dust ..... " "	.....	‡530	.....	.....
" ore ... .. " "	.....	.....	3,093	.....

Total United States.§§

Articles.	June.		Jan.—June.	
	Expts.	Impts.	Expts.	Impts.
Antimony.. ... long tons	.....	88	.....	616
" ore... " "	.....	118	.....	832
Copper fine .... " "	6,044	3,990	47.274	11,925
" sulphate.. " "	1,367	.....	10,743	.....
Iron, pig & bar.. " "	16,725	4,045	149,263	19,716
" ore..... " "	2,228	43,762	3,709	212,902
" rails .... " "	17	1	17	50
Iron& steel plates " "	4,595	398	35,180	935
" wire " "	8,396	232	56,190	1,409
Steel, billets, rods, etc..... " "	1,736	1,178	53,532	12,109
Steel rails.. ..... " "	19,506	379	113,069	523
Lead, pigs, bars & old ..... " "	4	.....	154	139
Lead in ore. .... " "	7,083	6,018	40,050	45,090
Nails, cut..... " "	661	.....	1,137	.....
" wire..... " "	3,713	.....	13,588	.....
Tin..... " "	105	1,423	216	17,107
" plates..... " "	4	4,602	170	25,702
Zinc ... . " "	43	49	540	546
" ore ..... " "	1,645	.....	10,275	.....

*New York Metal Exchange returns. †By our Special Correspondent. §Not specified. ‡Week ending Aug. 25th. §§ Monthly returns of the Treasury Department.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1¼c. a lb. on lead in ores; 2½c. per lb. on pigs, bars, etc; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. per lb Quicksilver, 7c. per lb. Spelter or zinc, 1½c. per lb. in pigs and bars; 2c. on sheets, etc. Copper, tin and platinum are free of duty.

Average Prices of Metals per lb., New York.

Month.	Copper.		Tin.		Lead.		Spelter	
	1899.	1898.	1899.	1898.	1899.	1898.	1899.	1898.
Jan.....	14.75	10.99	22.48	13.87	4.18	3.65	5.34	3.96
Feb.....	18.00	11.28	24.20	14.08	4.49	3.71	6.28	4.04
March...	17.54	11.98	23.82	14.38	4.37	3.72	6.31	4.25
April....	18.43	12.14	24.98	14.60	4.31	3.63	6.67	4.26
May.....	18.25	12 00	25.76	14.52	4.44	3.64	6.88	4.27
June.....	17.93	11.89	25.85	15.22	4.42½	3.82	5.98	4.77
July.....	18.33	11.63	29.63	15.60	4.52	3.95	5.82	4.66
August..	.....	11 89	.....	16.23	.....	4.00	. ...	4.58
Sept.....	.....	12.31	.....	16.03	.....	3.99	.....	4.67
October..	.....	12.41	.....	17.42	.....	3.78	.....	4.98
Nov.....	.....	12.86	.....	18.20	.. ...	3.70	....	5.29
Dec.....	.....	12.93	.....	18.30	.....	3.76	.....	5.10
Year.....	.....	12.03	.....	15.70	.....	3.78	.....	4.57

The price given in the table is for Lake Copper. The average price of electrolytic copper in January was 14.26c.; in February it was 17.02c.; in March, 16.35c.; in April, 17.13c.; in May, 17.20c.; in June, 16.89c.; in July 17.099c.

Financial Notes of the Week.

The speculative markets were quiet but strong: Operations are somewhat more conservative, although certain interests identified with the industrial section were manifestly bullish. The banks are also exercising more caution in making loans on stocks in new corporations.

The demand for silver dollars and fractional currency is very heavy and all the mints in the country are producing as rapidly as possible. The orders received at the U. S. Treasury Department, it is estimated, average over $60,000 daily. Usually this demand does not begin until autumn, but the increased activity in business just now has brought requests for fractional coins from all parts of the country.

Owing to the lack of Continental orders, and some pressure from speculative sales, silver has had quite a drop, but the market closes with a steadier undertone and it looks as if the bottom had been reached on this fall.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending August 26th, gives the following totals, comparison being made with the corresponding weeks in 1898 and 1897:

	1897.	1898.	1899.
Loans and discounts	$560,874,500	$672,091,800	$756,789,900
Deposits	636,916,000	760,234,400	858,154,000
Circulation	13,418,400	14,123,300	14,071,600
Reserve:			
Specie	92,628,100	155,968,700	772,381,100
Legal tenders	106,138,600	55,433,200	54,531,200
Total reserve	$198,766,700	$211,401,900	$226,912,300
Legal requirements	159,249,000	190,058,600	214,533,775
Balance, surplus..	$39,517,700	$21,343,300	$12,378,525

Changes for the week this year were increases of $9,056,000 in loans, $6,934,100 in deposits, $95,600 in circulation and $264,800 in legal tenders; decreases of $1,235,100 in specie, and $2,703,825 in surplus reserve.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding dates last year:

	1898.		1899.	
Banks.	Gold.	Silver.	Gold.	Silver.
N. Y. Ass'd.	$155,968,700	.....	$172,381,100	.....
England ...	175,326,710	.....	175,197,020	.....
France	377,548,090	$249,412,885	386,143,940	$240,134,175
Germany ..	146,320,000	75,380,000	139,155,000	71,685,000
Spain	52,405,000	27,115,000	64,800,000	68,070,000
Aus.-Hun. .	174,940,000	63,045,000	182,885,000	63,595,000
Neth'l'ds ...	21,525,000	34,465,000	13,710,000	30,210,000
Belgium ...	14,775,000	7,385,000	14,975,000	7,485,000
Italy	74,790,000	10,470,000	77,935,000	11,405,000
Russia	547,910,000	22,740,000	474,780,000	26,480,000

The returns of the Associated Banks of New York are of date of August 26th, and the others are of date of August 24th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports gold only.

The statement of the United States Treasury on Friday, September 1st, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date of last week:

	Aug. 25.	Sept. 1.		Changes.
Gold	$246,529,437	$246,946,924	I.	$417,487
Silver	4,162,385	4,793,703	I.	631,318
Legal tenders.....	16,812,131	17,408,452	I.	596,321
Treas. notes, etc.	793,786	771,260	D.	22,526
Totls....	$268,297,739	$269,920,339	I.	$1,622,600

Treasury deposits with national banks amounted to $81,333,955, an increase of $3,914,281 during the week.

Indian exchange continues strong at 15.97d., while a few sales of Council bills are reported at 16d. per rupee. Little rain in the country has caused some apprehension as to the crops.

Other Metals.

Daily Prices of Metals in New York.

Aug.-Sept.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London, P'nce	Copper. Lake, cts. ℔ lb.	Copper. Electrolytic, ℔ lb.	Copper. Lond'n standard £ ℔ ton.	Tin, cts. ℔ lb.	Lead, cts. ℔ lb.	Spelter, cts. ℔ lb.
26	4.86¼	59⅛	27½	18½	17.45	... .	31⅛	4.57½	5.50
28	4.86¼	59⅞	27⅛	18½	17.45	76 0 0	31⅛	4.57½	5.50
29	4.86¼	59⅛	27½	18½	17.45	76 10 0	31⅜	4.57½	5.37½
30	4.86¼	59⅛	27⅛	18½	17.45	76 12 6	31¼	4.57½	5.37½
31	4.86⅛	58⅞	27⅛	18½	17.45	76 12 6	31⅜	4.57½	5.37½
1	4.86	59	27⅛	18½	17.45	77	31¾	4.57½	5.37½

The quotations given for electrolytic copper are for cakes, ingots and wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The market has been quiet, but firm. Manufacturers continue exceedingly busy and report that new orders are coming in at a fair rate. We do not hear of many transactions in this country, it appearing that buyers' wants for the near future have already been covered. However, we cannot discover any pressure to sell; in fact, the refiners still have the greatest difficulty in making shipments when due. Lake copper is still obtainable at 18½c.; electrolytic copper, in cakes, wirebars or ingots, at 17⅝@½c.; in cathodes at 17⅛@¼c., while casting copper is nominal at about 17¼@⅜c.

In Europe the scarcity of fine copper has become still more acute, and prices have advanced so that some sales for export were feasible. Our cables report that for spot delivery electrolytic wirebars command a premium. The market for speculative brands in London has also improved. While it closed last week at £75 17s. 6d., it opened this week at £76, and advanced to £76 10s., closing at £77@£77 2s. 6d. for spot and £77 5s.@£77 7s. 6d. for three months prompt.

Refined and manufactured sorts we quote: English tough, £79 15s.@£80 5s.; best selected, £80 10s.@£81; strong sheets, £87 10s.@£88; India sheets, £84 10s.@£85; yellow metal, 6⅞@7d.

According to our cable visible supplies for second fortnight in August decreased 300 tons.

Tin.—The market has been quite irregular, but in the main the tendency has been downward. The closing quotation last week was £142 5s., and the market opened this week at £143, but declined on Tuesday to £142 and on Wednesday to £140, on Thursday advanced again to £140 10s., and closes at £142 5s.@£142 7s. 6d. for spot and £143@£143 2s. 6d. for three months prompt. Statistics for the month of August have decreased 1,500 tons.

Prices in this country have followed the London quotations, except for early delivery, for which tin remains rather scarce. We quote the market at 31¾.

Cable advices give the shipments of tin from the Straits for August at 3,665 tons, against 3,610 tons in the same month last year.

Lead.—Various larger transactions are reported both for early and distant shipments. It appears that consumption is very good and buyers generally but poorly covered. Prices have changed but little, and we quote New York delivery at 4.55@4.60c. St. Louis delivery is 4.50 @4.55c.

The foreign market was slightly weak the beginning of the week, but has again recovered, and closes strong at £14 17s. 6d.@£14 18s. 9d. for Spanish lead. English lead, 2s. 6d. higher.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: The market for lead is quiet at 4.50c. for common, and 4.55c. for corroding, with very light trading.

Spelter.—A considerable pressure to sell has developed under persistent offerings, the market has been weak and irregular, and values have again declined. Sales are reported to have been made at 5¼c. Pittsburg, but as yet we have been unable to verify this. However, we learn of transactions on the basis of 5.15@5.20c. St. Louis, and 5⅜@5½c. New York. It appears that production is quite in excess of consumption.

The foreign market has also suffered a very considerable decline. It closed last week at £23 10s., and this week touched £22. At the close we quote £22 10s. for good ordinary brands, £22 15s. for special brands. These prices are far below the parity of values over here.

Antimony is quiet and steady, at 10½@11c. for Cookson's; 9¾c. for Hallett's, U. S. Star and Hungarian.

Nickel continues on unchanged lines, and no alteration in prices can be reported. We quote for ton lots, 33@36c. per lb., and for smaller orders, 35½@38c. London prices are 14@16d. per lb., according to size of order.

Platinum.—Demand is active and prices continue high. For large lots $15.50 per ounce is now quoted in New York, for smaller orders, $16@$17. The London quotation is 62@64s. an ounce.

Quicksilver.—The wholesale price in New York has been advanced 50c. and is now $47 per flask. The London price has also risen to £8 12s. 6d. per flask, with the same rate quoted from second hands.

The Minor Metals.—Quotations are given below for New York delivery:

	Per lb.		Per lb.
Aluminum.			
No. 1, 99% ingots.....	35@37c.	Bismuth.....	$1.45@$1.50
No. 2, 90% ingots... ..	31@34c.	Magnesium.....	$2.75@$3
Rolled sheets. .. ....38c. up		Phosphorus.....	40@50c.
Alum.-bronze.....	20@23c.	Tungsten.....	70c.
Nickel-alum.....	33@39c.	Ferro-tungsten, 60%.....	60c.

Variations in price depend chiefly on the size of the order.

LATE NEWS.

The different coal companies of the Georges Creek Region have made answer to the miners' committee request of August 12th asking for an increase of 10c. per ton, that an advance cannot be given unless it be added to the price of the coal, which would make the companies unable to compete with Virginia prices and decrease the market for Georges Creek coal, cutting down the output and throwing men out of employment.

A press despatch reports the theft of about $50,000 worth of silver bullion from the Granite-Bimetallic Mine, of Phillipsburg, Mont., and states M. Mayer, an assayer, John F. Boyd and James McDonald were guilty, the two latter employees of the company. Boyd was night watchman at the mill, and his thefts, it is alleged, have been going on for about 14 months. He deposited the bullion with Mayer, the assayer. Other persons are said to be implicated in the crime.

A Duluth, Minn., despatch says that there is to be a new railroad in St. Louis County. Carnegie interests, through the men connected with the Oliver Mining Company, filed articles August 30th, incorporating the Virginia & Ely Railroad Company. The capital is $1,000,000. The incorporators are O. W. Baker of New York City; Henry W. Oliver, Henry Curry, James Cayley, Daniel M. Clemson, Charles D. Fraser and George T. Oliver, of Pittsburg, and Chester A. Congdon, of Duluth. As the name indicates, the road will run from the Mesabi to the Vermillion Range. It will haul the ore from the Pioneer and other mines of the Oliver Company at Ely, and will probably connect with the Duluth, Mesabi & Northern.

One of the last iron and steel companies projected is the Danville Bessemer Company which Philadelphia despatches state has been organized under the laws of New Jersey. The capital stock is $1,200,000, and the company is backed by the interests which brought out the Susquehanna Iron and Steel Company, and the New Haven Iron and Steel Company. The property of the company is stated to include the North Branch Steel Company with a blast furnace, Bessemer plant and rolling mill at Danville, Pa., together with 40 acres of land. The furnace is now in blast and is reported to be in good condition, while it has orders on hand for pig iron until the end of the year. The Bessemer plant is stated to be ready for work and can produce 250 tons a day. The rolling mill has a plate mill, two trains of rolls, a shape and a rail mill, of which the plate train is producing about 200 tons a week. It is stated that the works, exclusive of the land on which they stand, originally cost $800,000, and are taken over by the company at $600,000, leaving $600,000 of the $1,200,000 capitalization for working purposes. The company's office will be in Philadelphia.

The Pittsburg Coal Company, the rail coal mine combination, is progressing favorably, and a meeting will be held within 2 weeks to elect officers. The new corporation owns the coal properties of 104 of the 107 individuals and firms in the business, has practically absolute control of the docks and coal loading plants on the Great Lakes, and has a monopoly on all the outlets to the coal markets of the East, West and Northwest, of the Pittsburg District. Pittsburg papers state that there is an understanding between this combine and the combine of the river coal interests of the Pittsburg district, so that neither will encroach upon the territory of the other, thus putting the Pittsburg District, with its output of 22,918,804 tons of coal last year, in the hands of 2 great concerns. Of that total output last year the properties now owned by the Pittsburg Coal Company produced over 17,000,000 tons, and this year it is thought that the production will exceed 20,000,000 tons. Included in the assets of the concerns taken over are 81,236 acres of coal land and 7,126 acres of surface land in Pennsylvania, situated in the Counties of Allegheny, Fayette, Washington and Westmoreland.

(By Telegraph.)

(From Our Special Correspondent.)

Pittsburg, Pa., Sept. 1.—A frightful boiler explosion at the Republic Iron Works plant of the National Tube Company this morning killed 5 men and injured 5 more, 2 of whom will probably die. The plant was completely wrecked. The demand for pipe has been very heavy and the works have been running full time. The accident may seriously interfere with the company filling its contracts.

MINING STOCKS.

Complete quotations will be found on pages 296, 297 and 298 of mining stocks listed and dealt in at:

Baltimore,	Philadelphia,	Mexico.
Boston.	Spokane.	Paris.
Colo. Springs.	Salt Lake.	Rossland.
Denver.	San Francisco.	Toronto.
New York.	London.	Valparaiso.

New York. Sept. 1.

Speculation has been uninteresting. Amalgamated Copper was featureless and lower at $96½@$98, while Anaconda, with fairly large dealings, fluctuated between $56@$57½, closing weaker. British Columbia Copper showed a little business at $11¼@$12, and Tennessee Copper at $19½@$20½. Union Copper was dormant at $25@$27.

In American Smelting and Refining preferred stock some large sales were made at $90⅜@$92, and of the common at $42½@$44—both shares showing lower prices than last week.

Ontario of Utah was sold in 100 share lots at $8¼@$9¼, and Horn Silver at $1.35. Alice, of Montana, brought $1, and Elkton Consolidated of Colorado the same. Small Hopes touched $1.35, Isabella 90@93c.; Anaconda Gold, 57¾@58c.; Jack Pot at 55@60c., and Work, of Cripple Creek, 30c.

A sale of Deadwood Terra of South Dakota was made at 85c.

New companies are being floated very persistently in the East. Among them is the American Zinc Mining Company, with an authorized bond issue of $100,000 and $500,000 capital stock. The company claims to have a valuable mining lease covering about 38 acres of land, including plant, etc., near Galena, Kansas, adjoining the North Empire Mining Company. Subscriptions are solicited for the entire issue of $100,000 of the first mortgage 6% gold bonds at par. The directors are R. L. Edwards of New York, A. T. Kelley of New York, A. F. Nathan of Kansas City, Mo., F. B. Wilcox of Kansas City, Mo., and E. Hope Norton of New York.

The Colorado Fuel and Iron Company has called a special meeting for September 25th to increase the capital stock from $15,000,000 to $25,000,000.

The Republic Iron and Steel Company has been placed in the unlisted department of the New York Stock Exchange. There was listed $27,352,000 common and $20,852,000 preferred stock. The company has just declared its first quarterly dividend of 1¾% on the preferred stock, payable October 1st.

Boston. Aug 30.

(From Our Special Correspondent.)

There was no real sensation in the local stock, although efforts were made to start up interest. The higher priced copper stocks were quiet. The United States Mining Company's shares were largely influenced by the deal in Centennial Eureka. On August 25th the Centennial Eureka stockholders voted to sell their shares to the United States oil people at $70 per share. All but 215 of the 30,000 shares were sold, and the option will be taken up and the property brought out soon with a new capitalization.

Bonanza showed large trading to Lawson brokers. Rumors were circulated that Standard Oil experts reported favorably on this property, and that the Amalgamated people will exercise their option to take over the Cochiti grant owned by the Bonanza Company for $2,000,000. On Tuesday, Bonanza stock, after opening strong, declined sharply on rumor that the Standard Oil option would not be taken.

Calumet & Hecla sold at $840, Boston & Montana, $352@$354; Quincy, $160@$159¾; Osceola, $90, and Arcadian at $73½@$74.

It is stated that H. M. Whitney has secured practically all the money needed for the Dominion Iron and Steel enterprise at Cape Breton from Canadian banks. There were but three underwriters in the city of Boston. The Dominion Government allows a bounty until 1907 of $5.50 per ton on steel and $3.50 per ton on iron. This bounty places the company beyond the range of competition until its works are well established.

On the curb, Amalgamated Copper found buyers at $96½@$97¼. Closing prices are: Bonanza off quarter to $1¾ on large sales; Calumet & Hecla, $840; Quincy, $159; Tamarack, $228; Arcadian, $73; Bingham, $17¾; Ysabel, $14; Pioneer, $2¼@$2¾; Wolverine, $46½; Franklin, $20¼; Tri-Mountain, $10¾; American Zinc, $62⅜, later $62; Centennial, $36; United States Mining, $40¼, up ¼; Isle Royal, $51; Utah, $43¾; Mass., $12¼; Mohawk, 22¼; Atlantic, $27; Amalgamated, $96¼@$97¼; New England Gas and Coke, $29½@$30½.

Salt Lake City. Aug. 26.

(From Our Special Correspondent.)

A bear carnival held possession of the Utah mining share market the current week. An attack on Grand Central last week started it. Although this is at end, other shares are more vulnerable, and their recovery will be slower. The Park City list is to be excepted. It throughout displays improvement. Possibly this shaking up may prove beneficial and will soon be followed by a better market tone.

Bullion Beck did business at $5.70; exploration progress favorably. On Aug. 24th at Centennial-Eureka special stockholders' meeting it was unanimously voted to amend incorporation articles relative to buying and selling mines, etc., as desired by Bostonians. It is said the transfer may be consummated in September. The few shares out are firmly held at practically purchase price for the property. Chloride Point took a header. Daly West sold up to $12.30, with quiet inquiry for the stock. Dexter's softening is said to be due to lightning burning out the electric transformers, causing a temporary shutdown of the mill. Daisy softened considerably. Dalton & Lark is a shade firmer. Dalton took a little upward flurry. Eagle & Blue Bell lost part of its recent gain, but closed strong. Galena slowly improves. Geyser-Marion is weaker.

Grand Central is on the up grade. It is an open secret that there is friction among the large holders. Joe Bowers gives promise of being one of the fall favorites. Another 5c. assessment is levied on Lower Mammoth, and the shares sagged. Mammoth softens to the $2 notch in spite of having paid 45c.—or $180,000—in dividends since June 1st. Mercur shows more strength, the only one on the gold list of which this can be said. Northern Light is on the down grade. Sacramento has declared the customary $5,000 dividend, payable Sept. 1st. South Swansea is off a shade. Star Consolidated declines. Sunshine fails to attract interest. Sunbeam was active at about last week's figures. Yankee Consolidated, a new Tintic stock, with 200,000 shares, par 10c., is causing a local stir, the shares selling around 17.

San Francisco. Aug. 24.

(From Our Special Correspondent.)

For a while the mining shares market ruled firm, but the bears were soon at work, and at the close prices declined.

Consolidated California & Virginia weakened on reports that nothing of value has yet been found on the 1,800 ft. level. Sales were made early in the week at $1.65@$1.70. Ophir also declined to $1. The other stocks were affected likewise.

Much attention is given to the forthcoming meeting of the American Institute of Mining Engineers in this city. Some very extravagant reports have been circulated in the back-country press about the visiting engineers representing millions of dollars, big syndicates, etc. Though the mining editors here are not so imaginative. I feel confident our people will spare no pains to entertain the institute's members.

I have just learned that the Comstock Pumping Association has approved the revised contract for electrical power with the Truckee River General Electric Company, and the document is soon to be signed. Mr. G. McM. Ross has resigned as superintendent of the Comstock Pumping Association. He will be succeeded on Sept. 1st by Mr. Joseph R. Ryan, who is superintendent of the Consolidated California & Virginia mine.

There are now pending 12 assessments on Comstock shares, to be paid within the next month. Latest quotations are: Consolidated California & Virginia, $1.75@$1.80; Ophir, $1.05@$1.10; Best & Belcher, 59c.; Mexican, 48c.; Gould & Curry, 36@37c.; Chollar and Potosi, 31c. each.

London. Aug. 21.

(From Our Special Correspondent.)

In spite of the fact that half the city is away for its summer holidays, the West Australian mining market shows considerable life and all the Kalgoorlie companies are booming at high prices. The "Financial Times" continues to exert considerable influence in interesting the public by publishing special literature on the subject. This week they have published a handbook of the various companies and mines in that district, accompanied with plans, etc., which, together with the supplements recently issued, forms a useful record of operations at Kalgoorlie. Other sections of the mining market are practically dead. The South African section has for a long time been inactive, owing to the political troubles in the Transvaal. In spite, however, of politics, the production of the Rand continues to mount up merrily, the July output being 456,474 crude oz. The increase was very evenly distributed, but the accession of Ferreira Deep as a producer accounts for a large part of the increase.

A company called the Mount Chalmers Copper Mines, Limited, has made its appearance this week. This company has been formed to acquire mines of this name 16 miles from Rockhampton, Queensland. There appears to be a good showing of sulphides carrying gold and silver, though their regularity and continuity of occurrence have not been proved to any extent. The properties have been brought to London by a Mr. Bergl of Queensland, and they are being floated here by Mr. L. P. Ford. The directorate does not strike me as particularly high class, but on the other hand, they have well-known lawyers, brokers, bankers and auditors. The capital, £300,000, is far too big for a practically unproved property.

Another copper company that is being introduced is the United Spanish Copper Mines, Limited. No prospectus has been issued, but the shares have all been allotted to insiders, who will, by judicious advertising, unload on the public later on. Mr. W. J. Pattison appears to be the leading spirit in the scheme. The properties are in Spain, in the range Cerro de las Minas, and Valencia is the nearest port, whence it is intended to ship ore to England. When promoters figure on 80 or 100 tons of ore weekly averaging 20% of copper with 30 oz. of silver and take £75 per ton for the price of copper, it is pretty obvious that there is nothing but trouble ahead for subscribers, especially as the mines were bought in a more or less developed state from local owners.

For a whole year or more the Mount Lyell group of mines has been very quiet; the beating of drums and blowing of trumpets have ceased and little is done in any of the shares on the stock exchange. During the last few days I have heard that the directors of the Copper Mines of Mount Lyell West, Limited, are getting it hot and strong from local shareholders, who accuse the board of incompetence and mismanagement. This company was formed in London nearly two years ago, and it differs from most Mount Lyell companies in having no Tasmanian or Australian board. One would think, however, with Mr. Charles MacCulloch (of the Australian MacArthur-Forrest Company) and Mr. Macnamara Russell as directors, the board should be capable of managing a mining proposition. The local shareholders, however, think otherwise, and plainly tell the board that the management of their property is the laughing stock of the Mount Lyell field, producing many specific examples to back up their contentions. Whatever the rights and wrongs of the matter may be, it is certainly a fact that hardly any active development has yet been done; and though the company was formed in October, 1897, no accounts or reports have yet made their appearance, while the present quotation of the £1 shares is about 3 shillings.

Dolcoath Tin Mine in Cornwall is beginning to attract attention again in London. Not so much by reason of the new management, but owing to the increased price of tin, the company has been able to earn a net profit during the year ended June 30th last, of £36,500. The price obtained for their black tin was £46 in the first half of the financial year and £66 in the second, while the present price is £83, so future profits may be even larger. It is noteworthy that the directors are gradually substituting Frue vanners for Cornish buddles, though Mr. Thomas is somewhat sceptical of their superiority.

As I mentioned in a recent letter, the mismanagement of mining companies in London has recently occupied the attention of the judges a great deal more than formerly. Another example of promoters and directors being brought to book for improper conduct is to be found in the action "Shaw versus Bainbridge, Tapp & Holland," judgment in which has just been given. This action was in connection with the management of a company called the St. Helens Development Syndicate, which was formed some four or five years ago by Messrs. Bainbridge, Seymour & Company, the mining engineers, in connection with other people, for the purpose of acquiring claims in Rhodesia. Mr. F. G. Shaw was made manager and was given practically carte blanche in the way of examining and obtaining suitable claims. Mr. Shaw appears to have been a careful and conscientious manager, but for some reason or other some of the directors thought fit to go to Rhodesia, and to do similar work to Mr. Shaw's without the latter's knowledge. It turned out that some of the options so obtained by these visiting directors were invalid, but the board proceeded with the business of alloting shares in payment for them. As a matter of fact, Mr. Bainbridge and Mr. Tapp made considerable money profit out of the options which proved invalid. The unearthing of this scandal was left to Mr. Shaw, the manager, who with rare public spirit began an action against these two directors and Mr. Holland. The result of the trial is that Messrs. Bainbridge and Tapp have to refund to the company all profits obtained, while Mr. Holland was severely reprimanded for being a party to such business. The learned judge added: "I feel bound to say that I regard with amazement the mode in which this transaction was entered upon and carried through by the directors. It would make the hair of every shareholder stand on end if he only knew the facts and the casual way in which, in this and similar cases, the interests of shareholders are treated, and large sums in cash and shares are bandied to and fro as if they were mere counters to be played with."

Toronto, Ont. Aug. 29.

(From Our Special Correspondent.)

The market during the past week has been very erratic, and considerable advance has been recorded in some of the shares. Silver Bell Consolidated advanced to 9c., and then sold off again to 5½. Rambler Cariboo advanced from 32 to 42, and is firm around that figure. There is also a movement in Big Three, Saw Bill and Gold Hills. Superior Gold and Copper is steady.

STOCK QUOTATIONS.

NEW YORK.

NAME OF COMPANY.	Locat'n.	Par val.	Aug. 25. H.	Aug. 25. L.	Aug. 26. H.	Aug. 26. L.	Aug. 28. H.	Aug. 28. L.	Aug. 29. H.	Aug. 29. L.	Aug. 30. H.	Aug. 30. L.	Aug. 31. H.	Aug. 31. L.	Sales
Adams Con	Colo..	$10	.08	....	.06	....	.08	....	.08	....	.06	....	....	....	....
Alamo	"	1	.09	....	.08	....	.09	....	.09	....	.09	....	.13	.12	200
Alice	Mont.	5	.85	....	.80	....	.80	....	.80	....	1.00	....	....	....	100
Alta	Nev..	2	....	....	....	....	.07	....	....	....	....	....	....	....	500
Ama'gamated C	Mont.	100	97.75	97.00	98.00	97.38	96.75	96.50	97.25	96.50	97.00	96.25	....	....	....
Anaconda, c	Mont.	25	57.75	57.00	58.75	....	58.00	57.00	57.00	56.00	56.25	56.13	....	....	7,620
Anaconda Gold	Colo..	5	.50	....	.51	....	.47	....	.50	....	.46	....	.55	.53	100
AnchoriaLel	"	1	.70	..	.72½	....	.72½	....	.71	....	.71½	...	.75	.72½	....
Andes	Nev..	2	....	....	....	....	.19	....	....	....	....	....	....	....	500
Argentum-Jun	Colo..	2	.25	....	.28	....	.25	....	.26	....	.25	....	....	....	....
Belcher	Nev..	3	.27	....	.31	....	.28	....	....	....	.28	....	....	....	....
Best & Belcher	"	3	.35	....	.55	....	.64	....	.85	....	.55	....	....	....	100
Breece	Colo..	5	1.80	....	1.80	....	1.80	....	1.70	....	1.75	....	....	....	....
Brit.Col.Copper	B. C..	10	12.00	11.75	12.13	11.88	11.75	11.50	11.75	11.25	11.88	11.75	....	....	....
Brunswick	Cal..	1	.19	....	.20	....	.22	.22	.23	....	.21	....	....	....	700
Caledonia	S.Dak	1	.50	....	.50	....	.50	....	.50	....	.50	....	....	....	....
Catalpa	Colo..	10	....	....	....	....	.20	....	.20	....	.20	....	....	....	....
Chollar	"	3	.25	....	.25	....	.29	....	.37	....	.20	....	....	....	500
Comst'k T., st'p	"	100	.04	....	.04	....	.04	....	.04	....	.04	....	....	....	....
do. bonds	"	100	.01	..	.04	....	.04	..	.01	....	.04	....	....	....	58
Con. Cal. & Va	"	20	1.75	....	1.80	....	1.65	....	1.60	....	1.85	....	....	....	....
Con. Imp	"	2½	....	....	....	....	.03	....	....	....	....	....	....	....	1,200
Croesus	Colo..	1	.02	....	....	....	.01	....	.01	....	....	....	....	....	300
Cr. & Cr. Creek	"	1	.09	....	.10	....	.09	....	.09	....	.10	....	....	....	1,000
Crescent	"	10	.15	....	.15	....	.15	....	.15	....	.15	....	....	....	....
Cripple Cr. Con	"	1	.12	....	.09	....	.14	....	.13	....	.13	....	.14	.13	1,500
Crown Point	Nev..	9	.30	....	.25	....	.28	....	.24	....	.26	....	....	....	700
Deadw'd Terra	S.Dak	25	.65	....	.65	....	....	....	.85	....	.65	....	....	....	....
Dunkin	Colo..	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Elkton	"	1	.95	....	1.00	....	1 00	....	1.01	....	1.045	....	1.05	1.00	....
Eureka	Nev..	20	.40	....	.50	....	....	....	.40	....	....	....	....	....	....
Father de Smet	Dak..	100	.10	....	.08	....	....	....	.10	....	.10	....	....	....	....
Garf. Con	Colo..	1	.13	....	.15½	....	.15¾	....	.15¾	....	.15	....	.16	.15¾	....
Gilpin & Linc'n	"	1	....	....	.45½	....	....	....	....	....	....	....	....	....	200
Gold Coin C.Ck	"	1	2 05	....	2.05	....	2.05	....	2.00	....	2.07	....	2 05	....	....
Gold Coin Gilp	"	5	....	....	....	....	....	....	....	....	....	....	....	....	....
Golden Fleece	"	1	.25	....	.24	....	.24	....	.24	....	.25	....	.30	.25	....
Gould & Curry	Nev..	3	.35	....	.30	....	.28	....	.31	....	.32	....	....	....	800
Hale&Norcross	Nev..	3	.30	....	.25	....	.27	....	.27	....	.27	....	....	....	....
Homestake	S.Dak	100	65.00	....	67.00	....	65 00	....	65.00	....	65.00	....	....	....	....
Horn Silver	Utah..	25	1.30	....	1.35	....	1.35	....	1.35	....	1.35	....	....	....	200
Iron Silver	Colo.	20	.50	....	.52	....	.85	....	.50	....	.50	....	....	....	....
Isabella	"	1	.85	....	.84	....	.87	....	.90	....	.93	....	.90	.85	1,100
Jack Pot	"	1	....	....	....	....	....	....	.60	....	....	....	....	....	1,000
Jefferson	"	1	.13	....	....	....	.14½	....	....	....	.07¾	....	.14½	....	....
Justine	"	1	.01	....	.01	....	.01	....	.01	....	.01	....	.02	.01	....
King & Pemb	Ont..	10	.8	....	.20	....	.15	....	.18	....	.16	....	....	....	....
Lacrosse	Colo..	10	.16	....	.14	....	.14	....	.16	....	.16	....	....	....	....
Leadville Con	"	10	.09	....	.09	....	.09	....	.09	....	.09	....	....	....	900
Little Chief	"	20	.20	....	.20	....	.18	....	.19	....	.19	....	....	....	800
Mexican	Nev..	3	.45	....	.48	....	.44	....	.45	....	.47	....	....	....	....
Mollie Gibson	Colo..	5	.26	....	.25	....	.25	.24	.26	....	.27	....	.25	....	1,200
Morenci Cop.pf	"	1	1.75	....	1.75	....	....	....	....	....	1.74	....	1.753	1.76	900
Mouiton	Mont.	25	.81	....	.8	....	.8	....	.80	....	.85	....	....	....	100
Mt. Rosa	Colo..	1	.26	....	.30	....	.25	....	.31	....	.32	....	.35	.32	....
Occidental	Nev..	3	.15	....	.15	....	.15	....	.14	....	.15	....	....	....	....
Ontario	Utah..	10	7.75	....	7.50	....	9 00	....	7.75	....	8.25	....	....	....	200
Ophir	Nev ..	8	1 00	....	1.00	....	1 00	....	1.00	....	1.0	....	....	....	....
Pharmacist	Colo .	1	.04	....	.01	....	.04	....	.04	....	.05	....	....	....	1,000
Phœnix	Ariz..	1	.02	....	.09	....	.11	....	.09	....	.09	....	....	....	....
Plymouth Con	Cal..	10	.01	....	....	....	....	....	.08	....	.1	....	....	....	....
Portland	Colo..	1	1.9	....	2.00	....	1.90	....	1.90	....	2 075	....	2.15	2.03	....
Potosi	Nev..	3	.2	....	.3	....	.28	....	.3	....	.3	....	....	....	100
Quicksilver	Cal.	100	2 00	....	2 0	....	2 00	....	2.0	....	2 0	....	....	....	....
do. pref	"	100	8 00	....	8.00	....	8 0	....	8.0	....	8 00	....	....	....	....
Savage	Nev..	2½	.15	....	.2	....	.18	....	.2	....	.15	....	....	....	400
Sierra Nevada	"	3	.72	.70	.72	....	.67	....	.69	....	.65	....	....	....	900
Small Hopes	Colo..	20	1.15	....	1.20	....	1 15	....	1.20	....	1.35	....	....	....	200
Specimen	"	1	.11	....	.10	....	.10	....	.10	....	.10	....	....	....	....
Standard Con	Cal..	1	2.65	....	2.65	....	2.60	....	2.70	....	2 70	....	....	....	200
Syndicate	"	10	....	....	....	....	....	....	....	....	....	....	....	....	....
Tenn Copper	Tenn	25	20.50	19.88	20.12	19.50	20.5	20.00	20 50	20 0	20.50	19.75	....	....	....
Union	Colo..	1	.31	..	.32	....	.3	....	.33	....	.36	....	.35	.34	....
Union Con	Nev..	2½	.30	....	.20	....	.18	....	.18	....	.20	....	....	....	500
Utah Con	"	5	.07	....	.07	....	.06	....	.05	....	.05	....	....	....	....
Work	Colo.	1	.30	.27	.28	....	.29	.27	.28	....	.30	....	.30	.28	1,000
Yellow Jacket	Nev..	3	.28	....	.38	....	.28	....	.27	....	.27	....	....	....	....

COAL AND INDUSTRIAL STOCKS.

Am. Sm. & Ref.	.....	$100	43¾	43	43	....	43¾	44	43¾	43	43¾	42¾	42¾	....	6,990
" " pf	.....	100	91¼	....	91¼	91	91¾	91¾	91	90¾	90¾	9 ¾	91	....	3,451
Am.S &W Co n	.....	100	57¾	56¼	57¼	56¾	58¾	57¾	59	57¾	58¾	57¾	58	....	21,703
" " pfr n	.....	100	98¼	98	98	....	98¾	....	99	....	98¾	....	99	....	3,470
Central of N. J.	N. J.	100	119¾	118¾	119	118¾	119	....	119¾	118¾	119¼	118¾	119¼	....	7,242
Col. C. & I. Dev	Colo.	100	....	....	....	....	2¾	1¾	....	....	2¾	2¼	2¾	....	700
Col. Fuel & I.	Colo.	100	51¾	51¾	5¼	50	49¾	48	49¾	49	51	49	51¾	..	12,038
Col. & H.C.& I.	Colo.	100	19	....	18½	....	18¾	17¾	....	....	17¾	....	18¾	....	1,260
Del. & Hud.	N. Y.	100	125¼	124¼	124¾	....	124¾	124	124¾	123¾	122	121¾	122¾	....	7,601
Federal Steel	....	100	59	58	....	....	63	58¾	60	58¾	61¾	59	60¾	....	47,220
" " pf	....	100	81¾	81¾	81¾	81¾	82¾	81¾	82¾	82	82¾	82	....	....	9,890
National Lead	N. Y.	100	32¾	....	....	....	32½	31¾	....	....	31¾	31¼	31¾	....	1,300
" " pf	Md..	100	....	....	....	....	113¾	....	114¼	114¼	113¾	....	....	....	145
National Salt	....	100	49	47¾	49	48	47	46	47¾	46	47¾	46	48	46	....
" " pf	....	100	76	74	75	73	75	73	76	74	76	75	76	73	....
N. Y., Ont. & W.	N. Y.	100	27¾	27¼	27¾	27¼	27¾	26¾	27	26¾	27	26¾	27	....	28,320
Reading, 1st pf.	Pa....	100	63¾	62¾	64	62¾	63¾	61¾	61¾	61	63¾	61¾	63¾	....	47,775
" 2d pf.	"	100	35	34¾	....	....	34¾	33¾	33¾	....	33¾	....	35	....	3,815
Republic I. & S.	....	100	....	....	22¼	....	24¾	22¾	27¾	24¾	28¾	26¾	29	....	76,574
" " pf	....	100	....	....	75	74¼	75¾	74¾	79	74¾	78¾	77¾	77¾	....	25,724
†StandardOil Tr	....	100	463	461	465	462	464	462	466	463	463	461	463	460	....
Tenn.C.,I.&R.R.	Ala....	100	95¾	94¼	97¾	95¾	98¼	96¼	97¼	95¼	97	96	95¾	....	24,145

*Ex-dividend.

PHILADELPHIA PA.

NAME OF COMPANY.	L'cation.	Par Val.	Aug. 24. H.	Aug. 24. L.	Aug. 25. H.	Aug. 25. L.	Aug. 26. H.	Aug. 26. L.	Aug. 28. H.	Aug. 28. L.	Aug. 29. H.	Aug. 29. L.	Aug. 30. H.	Aug. 30. L.	Sales
Am. Alkali	.....	....	4.63	....	4.75	....	....	....	4.75	4 50	4 75	4.50	4.75	4.63	30,535
" pf.	.....	....	2.88	2.50	4 50	....	....	....	2.88	2.63	3.00	2.50	3.00	2.75	15,180
Bethlehem Irn	Pa.	....	....	....	62.50	....	....	....	....	....	....	....	....	....	16
Bethlehem St'l	"	$50	22.00	21.75	22.25	22.13	....	....	22.0	....	22 00	....	22.00	....	1,397
Cambria Iron	"	50	....	....	....	....	....	....	....	....	44 75	....	44.75	....	110
Cambria Steel	I.T.	50	23 25	22.50	23.25	23 13	....	....	23 38	23.00	23.13	22.75	23.00	22.88	11,845
Choctaw, pref.	Pa.	50	48.25	48.03	....	....	....	....	....	....	48.00	....	....	....	185
Lehigh Val	"	50	27.50	27.38	27 50	27.00	27.38	27.13	27.25	27.00	26 75	....	26 75	....	1,631
Penna. R.R.	"	50	....	....	68.00	67.75	....	....	67.75	....	68.00	67.75	67 75	....	1,082
Susq I. & S.	"	....	7.75	7.38	7 88	7.50	....	....	7.88	7.63	7.63	7.50	7.88	7.63	10,907
United Gas I.	"	50	....	....	....	....	170	160¼	....	....	170	165	....	....	950
Welsb. of Can	Can.	100	2.25	....	2.25	....	....	....	....	....	....	....	....	....	3 2
Welsh. Comi.	"	100	15.25	15.13	....	....	....	....	....	....	12.00	....	13.25	12 50	1,100
Welsb. Light	"	100	....	....	....	....	....	....	....	....	49.00	....	55.00	52.50	1,679

Total shares sold, 76,799.

VALPARAISO, CHILE.* July 15.

NAME OF COMPANY.	Location.	Capital paid.	Sh.Val. paid up.	Last Div'nd. Amt.	Last Div'nd. Date.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat, silver	Chile..	$3,300,000	$100	4 p.c.	1897	21	22	21
Caracoles, silver	"	315,000	100	10 "	1894	....	....	....
Huantajaya (mine) silver	"	1,000,000	100	15 "	1894	....	....	....
Huanchaca, silver	Bolivia..	8,000,000	25	4 "	1895	30	32	32
Oruro, silver	Chile....	800,000	200	....	....	250	280	280
Todos Santos, silver	"	2,000,000	100	1 "	1895	4	5	6
Agua Santa nitrate	"	3,000,000	50	5 "	1898	152	153	152
Antofagasta, nitrate	"	2,000,000	200	8 "	1898	115	120	120
Soc. Internacional,nitrate	"	1,800,000	50	.....	.....	.....	.....	.....
Union, nitrate	"	8,000,000	200	.....	.....	42	46	44

* Special report of Jackson Bros. Values are in Chilean pesos or dollars.

BOSTON MASS.†

NAME OF COMPANY.	Par val.	No. of shares.	Aug. 24. H.	Aug. 24. L.	Aug. 25. H.	Aug. 25. L.	Aug. 26. H.	Aug. 26. L.	Aug. 28. H.	Aug. 28. L.	Aug. 29. H.	Aug. 29. L.	Aug. 30. H.	Aug. 30. L.	Sales
Aetna, cons. g.	$5	100,000	....	....	....	....	4.25	....	....	....	4.25	....	4.25	....	350
Adven't'e,Cons	25	100,000	9.00	....	....	....	....	....	....	....	9.00	....	9.00	....	160
Allouez	....	....	....	....	7.00	6.25	....	....	....	....	....	....	6.50	....	95
Am. Z., L. & S.	25	60,000	64.50	64.00	64.00	63 00	....	....	63.00	....	....	....	62.38	60.25	910
Anaconda	25	1,200,000	57.13	....	....	....	....	....	....	....	....	....	....	....	50
Arcadian, c	25	150,000	74.00	70 00	75.00	73.00	74.00	73.50	73.50	72.50	74.00	72 50	73.00	....	5,800
Arnold, c	25	60,000	15.00	14.75	14.88	14.50	14.50	....	14.50	....	....	....	....	....	1,245
Ashbed, c	....	40,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Atlantic, c	25	40,000	....	....	....	....	....	....	28.00	....	....	....	27.00	....	185
Baltic, c	25	100,000	27 00	....	27 00	....	....	....	27.25	26.50	26 00	....	....	....	488
Bingham, c.&g.	10	100,000	18.00	17.00	17.75	17.25	17.50	17.00	17.38	17.25	17 88	17.63	18.00	17.70	7,210
Bonanza, g	10	300,000	1 88	....	2.38	1.88	2 75	2.25	3.13	2.25	2 63	2.00	2.2	1.75	17,151
Boston q	....	100,000	....	....	....	....	....	....	....	....	6.63	....	....	....	100
Boston & C. C.	2	200,000	.40	.35	.35	....	32½	.30	.35	.30	.30	....	.25	....	10,500
Bos.&Mon.Tr.R	25	150,000	353	....	355	353	354	353	354	353	353	352	355	....	347
British Col	5	200,000	12.00	11.00	12.00	11.25	12.50	12.25	11 50	....	....	....	....	....	940
Butte & Bost., c	10	200,000	77.00	75 00	77.00	....	....	....	....	....	....	....	....	....	260
Cal. & Hecla, c	25	100,000	....	....	940	....	840	....	840	....	840	....	840	....	58
Catalpa, s	10	300,000	.40	.35	....	....	....	....	.45	.40	.45	.40	....	....	3,150
Centennial, c	25	90,000	35.63	35.5	36 50	36 00	36.00	35.75	36 00	35.50	36 00	....	36 40	35.50	2,105
Cochiti, g	10	150,000	17 75	16.50	18.00	17.50	17.63	17.13	17.00	16.25	17.00	16.38	19.63	17.25	23,171
Cochiti Rgts	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Copper Range	10	100,000	42.75	....	43.00	42.25	....	....	....	....	....	....	....	....	50
Crescent, s	10	900,000	....	....	....	....	....	....	....	....	....	.25	22½	....	700
Dominion Coal	100	150,000	53 50	53 00	53 50	53.13	53 50	....	53.50	53.00	....	....	....	....	660
do. pref	100	20,000	118	....	....	....	....	....	118	....	119	....	53.00	....	30
Federal Steel	100	464,843	59.13	59.00	58 50	....	....	....	60.00	58.75	59 75	58.75	61.00	59.75	5,885
do. pref	100	532,610	....	....	....	....	82.00	....	82 50	....	82.50	82.00	82 50	82.00	475
Franklin, c	25	100,000	....	....	20.50	20.25	20.50	....	20 50	....	20.50	....	20.25	20 00	465
Gold Coin, g	5	300,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Guanajuato	5	114,000	....	....	....	....	....	....	....	....	....	....	....	....	....
" pf.	5	81,167	....	....	....	....	....	....	....	....	....	....	....	....	....
Humboldt, c	25	40,000	....	....	....	....	....	....	2.88	....	....	....	....	....	50
I. Royal Con. c	25	100,000	52.25	50.75	52 00	....	....	....	....	....	....	....	51.00	....	1,260
Mass., Con	25	100,000	....	....	12.0	....	....	....	....	....	....	....	12.50	12 00	360
Merced, g	15	100,000	13.75	12.25	13.50	....	....	....	....	....	....	13 50	13.00	....	1,450
Michigan	25	100,000	....	....	....	....	12 88	12.50	....	....	....	....	....	....	300
Mohawk, c	25	100,000	20 00	....	22 00	21.00	22 50	....	22 00	21 50	22.0	21.50	22.50	22.25	1,540
Napa	7	100,000	....	....	....	....	....	....	....	....	....	....	....	....	....
N.A.Gold Dre'g	10	100,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Old Colony, c	25	100,000	9.75	....	10.00	9.75	10.25	10.00	10.50	....	10 25	10.00	....	....	1,150
Old Dominion,c	25	150,000	36.25	35.25	35.50	35.00	36.00	35.88	35.50	....	35.50	....	....	....	1,138
Osceola, c	25	93,000	89.00	....	....	....	89.00	....	89 00	....	90.00	88.00	....	....	435
Parrot, s c	10	229,850	54.00	52 75	53.00	52.50	53.00	52 75	53.00	....	....	....	....	....	1,240
Pioneer, g	10	100,000	2.25	....	2 25	2.00	2.38	2.25	....	....	....	....	....	....	1,090
Quincy, c	25	100,000	160	159	160	....	160	....	160	....	160	159	159	158¾	236
Rhode Island	25	100,000	7.50	7.25	7 50	7.25	.00	....	7.50	7.00	7.0	....	7.00	....	880
Santa Fe, g. & c	10	250,000	15.25	15.00	16.25	15.50	16.50	16.00	16.38	15.75	16.25	16 00	16 00	....	16,505
San. Ysabel, g.	5	130,000	13 75	....	14.75	13.75	14.25	14.00	4 50	13.50	....	....	14.25	14 00	5,657
Tamarack, c	25	60,000	228	....	....	....	....	....	227	....	228	227	228	....	51
Tecumseh, c	25	90,000	6.00	....	6.00	....	....	....	5 75	5 00	....	....	5.63	....	575
Tri Mountain	25	100,000	10.00	....	....	....	....	....	.1. 0	9 75	10 75	....	10 75	....	900
Union C. L	....	80,000	....	....	....	....	....	....	....	....	....	....	....	....	....
United States	25	250,000	39 50	37.38	39 50	38 88	39.63	39.00	41 00	38.75	40.75	40.00	41.25	41.00	35,673
Utah Cons,g &c	5	300,000	44 50	44.00	....	....	....	....	44.00	43.50	43.50	....	43 75	....	1,025
Victor	5	200,000	....	....	....	....	3.00	....	....	....	....	....	....	....	50
Victoria	25	100,000	6.50	....	6.50	....	....	....	6.75	6.50	6 75	6.00	7.00	6.25	515
Washington	25	40,000	....	....	....	....	....	....	1.50	....	....	....	....	....	25
White Knob	100	50,000	....	....	11 13	....	....	....	....	....	....	....	....	....	100
Winona, c	25	100,000	12.00	....	11.75	11 00	11 75	....	....	....	1.75	11.50	11.25	....	310
Wolverine, c	25	60,000	47.00	46.63	47.00	....	....	....	47.00	46.63	46.50	....	46.50	....	347
Wyandotte	25	100,000	....	....	....	....	....	....	6.00	....	....	....	6.00	5.25	100

†Official quotations Boston Stock Exchange. Total sales, 271,529.

COLORADO SPRINGS, COLO.‡

NAME OF COMPANY.	Par val	Aug. 21. B.	Aug. 21. A.	Aug. 22. B.	Aug. 22. A.	Aug. 23. B.	Aug. 23. A.	Aug. 24. B.	Aug. 24. A.	Aug. 29. B.	Aug. 29. A.	Aug. 30. B.	Aug. 30. A.	Sales.
Alamo	$1	.09¾	.09¾	.09¾	.09¾	09¾	10	.09¾	.09¾	09¾	10	.09¾	10	13,000
Anaconda	1	.53	....	....	....	.51	.52	.51	.52¾	.48	.52	.50	.52	6,000
Arg'ntumJ	1	.31¾	.32¾	....	.31	.28¾	....	.29¾	.30	.28¾	.29¼	.28¾	.29½	8,550
Cadillac	1	.03	.03¾	.03¼	.03	.03¼	....	....	....	....	....	....	....	69,100
C. C. Con	1	.13¾	.13¾	.13¾	.13	.13¾	.13	.13¾	.13¾	.13¾	.14	.14	.14¼	54,000
Dante	1	.16½	.17	.16½	.17	.16¾	.16¾	.17	....	....	....	....	....	64,100
ElktonCon	1	.96½	1.00	1 00¼	1.00¾	1.03	1.05	1.00	1.01	1.03¼	1.04	.47	1.09	26,500
El Paso G.	1	.47	.50	....	.49	.47½	....	.42	.50	.46	.50	.42	.45	1,100
Favorite	1	.05¾	.05¾	.05	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	....	....	....	81,000
Findley	1	.19	.19½	.19	.19¾	....	....	.19¾	....	.18½	.19	.18½	.19	17,000
Golden Fl.	1	....	.30	....	.23½	.29	....	....	....	.25	.30	....	....	....
Gold Hill	1	.04¾	.04¾	.04¾	.04¾	.04¾	.04	.04¾	....	....	....	....	....	86,500
Ing. Con	1	.09¾	.09¾	.09	.09¾	.09¾	.09¾	.09¾	.09¾	....	....	....	....	13,000
Isabella	1	.90¾	.91¾	.91	.94½	.90¾	.90¾	.89	.89	.89	.89¾	.88¾	.90	28,700
Jack Pot	1	.58¾	.58¾	.54¾	.57	.56½	.57½	.50¼	.50¾	.50¾	.64	.64	.64¼	243,000
Lexington	1	.14¾	.14¾	.14¾	.14¾	.14¾	.14¾	.14¾	.14¾	....	....	....	....	38,500
Magnet B.	1	.04¾	.04¾	.05	.05¾	.06	.06¾	.06	.06	....	....	....	....	117,000
Matoa	1	.35¾	.33	.35	.33¾	.34	.33¾	....	....	.34	.35	.32	.35	6,000
Midway	1	.07	.07¾	.06¾	.07¾	.08¾	.08¾	.07¾	.07¾	....	....	....	....	142,000
Mobile	1	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	....	....	....	....	11,000
Mollie Gib.	1	.25	....	.25	.30	.25	....	.26	....	.29	.26	.30	....	....
Montreal	1	....	....	.09¾	.09¾	....	.09¾	.09	.09¾	.09¾	....	....	....	....
Moon-A'c'r	1	1.00	1.02	.04	....	1 07	1.08	1.06	....	1.00	1.05	1.00	1.02	10,000
Mt. Rosa	1	.27¼	.28	.26	.28	....	....	.29½	....	.35	.40	.35	.37	1,750
New Haven	1	.03¾	.03¼	.03¾	.03¾	.03¾	.03¾	....	....	....	....	....	....	3,500
Oriole	1	.08¾	.08¼	.08¾	.08¾	.08¾

STOCK QUOTATIONS.

DENVER, COLO.‡

NAME OF COMPANY.	Par val.	Aug. 21. B.	Aug. 21. A.	Aug. 22 B.	Aug. 22 A.	Aug. 23. B.	Aug. 23. A.	Aug. 24. B.	Aug. 24. A.	Aug. 25. B.	Aug. 25. A.	Aug. 26. B.	Aug. 26. A.	Sales.
Mines:														
Anac'dia G.	$5	.....	.....	.52	.....	.51	.52	.50	.....	.50	.53	.51½	.....	1,500
Arg. J.	1	.31	.....	.....	.32	.29½	.....	.29½	.....	.29	.30½	.29¼	.....	.....
Bangkok	1	.01	.....	.01	.....	.....	.01¾	.....	.....	.01	.....	.....	.....	.....
Bankers	1	.10	.10¼	.11¾	.....	.12	.12¼	.11¾	.11¾	.10¾	.....	.11¾	.....	10,000
CrippleC.C.	1	.12¾	.13	.12	.13	.12¾	.13½	13	.....	.13	.....	.13½	.13¾	1,000
Della S.	1	.03	.....	.03	.....	.....	.....	.....	.....	.03	.....	.....	.....	.....
Elkton Con	1	.96	.....	1.00¼	1.02	1.05	1 05¾	1.00¾	.....	1.01	1.04	1.02	1.03	.....
El Paso	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fanny R.	1	.43	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Findley	1	.13¾	.19¼	.....	.....	.....	.....	.....	.....	.19	.....	.18½	.....	.....
Garf. Con.	1	.....	.....	.....	.18½	.....	.....	.....	.18¾	.....	.....	.18¾	.18¾	2,000
Gold Coin	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indepnd'nc	1	.40	.....	.36	.30	.....	.29	.23	.....	.40	.45	.29	.....	26,000
Iron Clad	1	.06	.06¾	.03¾	.05¾	.05¾	.06¼	.05¾	.06¼	.06	.06¼	.05¾	.....	2,000
Isabella	1	.89	9 2½	.92¼	95	.90½	.....	.90½	.91	.85½	.87	.87	.89	3,500
Jack Pot	1	.57¾	.....	.54	.....	.55¾	.56¾	.....	.57	.54	.....	.56½	.57¾	.....
Jefferson	1	.....	.09¾	.....	.09	.....	.09	.....	.....	.09¼	.10	.....	.....	.....
Keystone	1	.13	.13¾	.12¾	.....	.....	.....	.13¾	.....	.12¾	.12¾	.....	.....	.....
LosAngeles	1	.....	.....	.....	.....	.....	.....	.....	.....	.09½	.....	.13	.10¾	.....
Mollie Gib.	5	.25¾	.....	.26	.30	.....	.29	.23	.....	.....	.29	.....	.....	.....
NewZealnd	1	.36	.....	.36	.....	.35	.40	.37	.....	.35¾	.36	.35	.....	1,500
Ophir	1	.40	.....	.41	.....	.41	.50	.42	.....	.44¾	.49	.42	.49	250
Pharmacist	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland	1	2.00	.....	2.01	2.03	2 00	2.03	.....	.....	2.00	.....	2 00	2 02½	.....
Specimen	1	.12	.....	.12	.13½	.12	.....	.11¾	.....	.11¾	.....	.....	.....	2,000
Union Gold	1	33½	.....	.33	.....	.34	.34¾	.....	.....	.....	.35¼	.34¾	.35¾	.....
Work	1	.29¾	.30	29½	.29¾	29¼	.30	.29	.....	.29¾	.29	.28½	.30	500
Prosp'cts:														
C.C Imp	1	.005¾	.....	.....	.00 3½	.00 3½	.006	.....	.005¾	.005	.00 3½	.003	.006	88,000
Gene Field	1	.004¾	.....	.004	.....	.001	.005	.....	.004½	.004	.004¾	.004	.005	25,000
Illinois	1	.012	.013	.011¾	.....	.0.01¾	.011	.011	.....	.011	.012	.01 1½	.....	.....
Old Gold	1	.01 9	.01 3½	.0 9½	.02	.01 9	.02	.01 9	.01	.01 1½	.01 3½	.01 9	.01 1¾	19,000
Puritan	1	.00 5½	.....	.00 7½	.00 8½	.0.7 3½	.008	.0.8	.00 8¾	.00 7½	.....	.0.7 9¾	.....	38,000
Miscell.:														
Acacia	1	.16¾	.17¾	.16¾	.17¼	17¾	.17¾	.17½	.17½	.....	.16 7¾	.16¼	.16½	10,000
Alamo	1	.....	.09¾	.....	.....	.....	.....	.....	.....	.09¼	.....	.09¼	.....	.....
Aola	1	.....	.03¾	.03½	.03¼	.03¾	.03¾	.....	.03½	.....	.03¼	.03¼	.....	.....
Battle Mt.	1	.36½	37	38	.38½	.38	.39	.....	.28¾	.37¾	.....	.....	.39	1 000
C. C. & M.	1	.13	.....	.13¾	.....	.13¾	.....	.12¾	.....	.12¾	.13	.12¾	.....	.....
De Beers	1	.01½	.....	.....	.....	.....	.....	.....	.....	.01 2	.015	.01 1½	.012¾	1,000
Des Moines	1	.....	.....	.04¾	.05	.....	.....	.....	.....	.04¾	.....	.04¾	.....	2,000
Favorite	1	.05¾	.....	.....	.....	.05¼	.05¾	.05	.05¼	.05	.05¾	.05¾	.....	.....
Goldstone	1	.02	.....	.02¼	.02¾	.02¼	.02½	.02½	.02¾	.02¼	.02¾	.02	.02¾	37,000
Insley	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Magnet R.	1	.04¾	.05	.05	.05¾	.05¾	.....	.05¾	.....	.....	.....	.05¾	.05¾	16,000
Mobile	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.05	.....	.....
Trachyte	1	.08¾	.....	.....	.....	.....	.....	.07¾	.....	.07	.....	.07¾	.07¾	.....
Wh.of For.c	1	.01	.....	.....	.....	.01¾	.01¾	.01¾	.....	.....	.....	.....	.....	3,0

‡ Official Quotations Denver Stock Exchange. Total sales, 239,250 shares.

SAN FRANCISCO, CAL.

NAME OF COMPANY.	Location.	Par. value.	Aug. 24.	Aug. 25.	Aug. 26.	Aug. 28	Aug. 29.	Aug. 30.
Alpha Con.	Nev.	1.00	.06	.07	.06	.06	.06	.06
Alta	"	2.00	.07	.07	.05	.04	.04	.07
Andes	"	3 00	.17	.16	.16	.14	.15	.18
Belcher	"	3 00	.34	.37	.36	.34	.36	.36
Best & Belcher	"	3 00	.58	.59	.59	.59	.61	.65
Bullion	"	1.00	.07	.06	.06	.05	.05	.06
Caledonia	"	3.00	.59	.55	.54	.57	.61	.65
Challenge Con.	"	3.00	.31	.36	.32	.33	.36	.38
Cholar	"	3.00	.31	.31	.32	.33	.34	.37
Confidence	"	3.00	.75	.75	.78	.82	.80	.82
Con. California & Virginia	"	2 50	1.75	1.75	1.75	1.75	1.80	1.90
Cons. Imperial	"	1.00	.01	.02	.01	.01	.01	.01
Crown Point	"	3.00	.26	.25	.23	.21	.22	.23
Gould & Curry	"	3.00	.38	.36	.37	.36	.37	.38
Hale & Norcross	"	3.00	.36	.31	.31	.30	.30	.32
Julia Con.	"	1.00	.02	.02	.02	.02	.02	.02
Justice	"	2.00	.12	.12	.13	.13	.13	.14
Kentuck Con.	"	1.00	.03	.03	.03	.03	.04	.03
Mexican	"	3.00	.48	.49	.49	.49	.50	.54
Occidental Con.	"	3.00	.20	.20	.18	.18	.19	.19
Ophir	"	3.00	1.05	1.05	1.05	1.05	1.10	1.20
Overman	"	2.00	.10	.11	.13	.11	.10	.15
Potosi	"	3.00	.30	.31	.30	.31	.31	.33
Savage	"	2 50	.18	.17	.17	.17	.18	.19
Seg. Belcher & M.	"	2.00	.06	.06	.06	.05	.05	.06
Sierra Nevada	"	3.00	.68	.70	.70	.68	.71	.75
Standard	Cal.	10.00	2 60	2.60	2.60	2.40	2.60	2.65
Union Con.	Nev.	2.50	.21	.21	.21	.21	.22	.24
Utah Con.	"	1.00	.07	.07	.07	.07	.07	.08
Yellow Jacket	"	3.00	.27	.30	.30	.30	.30	.30

Official telegraphic quotations of San Francisco Stock Exchange.

TORONTO, CAN.*

NAME OF COMPANY.	Par val.	Aug. 23. B.	Aug. 23. A.	Aug. 24. B.	Aug. 24. A.	Aug. 25. B.	Aug. 25. A.	Aug. 26 B.	Aug. 26 A.	Aug. 28. B.	Aug. 28. A.	Aug. 29. B.	Aug. 29. A.	Sales
Ontario:														
Alice A.	$1	.18	.21	.17	.21	.16	20	.17	.20	18	.22	.15	.18	
Empress	1	04¾	.06	03½	.05¾	04½	.06¾	.04½	.05¾	04¾	.05¼	.04½	.06	3,000
Golden Star	1	.41	.42¾	.41½	.43	.41¾	43½	42	.42¾	.43¾	43¼	.44½	.47	5 500
J. O. 41.	1	.03¾	.04¾	.04	.04¾	.03¾	.04½	.04	.04¾	03¾	.04¾	.04	.04½	8,500
Olive	1	.79	.85	.79	.85	.79	.95	.85	.....	.85	.....	.79	.85	.....
British Col.:														
Athabaska	1	.38	42	.37½	.44	.38	.42	.38¾	.42	.38	.42	.40	.45	14,000
Big Three	1	13	15¾	13	.16	.13	16	.14	14¾	14	.15¾	.16	.20	17,0.0
Carib'oMcK	1	1.25	1.80	1 25	1.30	1.25	1.3	.....	.....	.....	.....	1.25	1 52	500
Crows N C'l	25	44 00	50.00	.....	.....	45 00	50.00	.....	.....	.....	.....	47.00	62 00	.....
Dardanelles	1	.12¾	.15	.12½	.14½	13	.15	.13¾	.14	13	.14½	.13	15¾	9,800
Deer Park	1	.01½	.03½	.02	.03¾	.02	.03¼	.02	.02¾	.02¼	.03	.01¾	.03	3,500
DeerT'lNo.2	1	.25¾	.25¾	.23¾	.23	.25¾	.24½	.25	.23¾	.25¼	.23	.26	.26	2,000
Even'g Star	1	.10	.12	.10	.12	.10	.14	.10	.....	10	.14¾	.10¾	12	.....
F'view corp	¼	.07½	.03¾	.07¾	.18¾	07¾	.18½	.18	.08¼	.08	.08½	.07¾	.08¾	1,000
Minnehaha	1	.16	.18¾	.16	.19	.15	.19¾	.16	.17	.16¾	18	.15½	.17½	5,0.0
MonteCrist.	1	.06	.07	.05¾	.06	.06	.04	.16	.07	.06	.03	.06	.08	7,000
Morrison	1	.16¾	.19	.15¾	.19	.16	20	.16	.....	.16	.....	.15	.18	5,000
Noble Five	1	.18	.25	.16	.22	.16	.24	22	.....	.22	.....	.18	.22	.....
N'rt'n Belle	1	.02¾	.03¾	.02	.03	.02¼	.03¾	.02	.02¾	.0.4	.02¾	.03	.03	6,000
Rambler C.	¼	.32	.....	.32¾	.35	38	.42	.40¾	.42	.40¾	.45	40	.42¾	12,000
Ratnmullen	1	.07¾	.08	.07¾	.08	.07¾	.08	.07¾	.07¾	.07¾	.07¾	.07¾	.08¾	23,000
Republic	1	1.23	1 29	1.23¾	1.29	1.26	1.30	1.26	1.3	1 26	1.27¾	1.23	1 30	4,100
Silver Bell	¾	.05	.08¾	.05	.09¾	.06	.19	.06	.07¾	05	.08	.03	08	12,500
Smuggler	1	.01¾	02¾	.01¾	.02¾	.01¾	.02	01¾	.02	01	.02	.01	.02	14,000
Van Anda	1	.10¾	11¾	.11¾	.11¾	.10¾	.11¾	.10¾	.11¾	1.¾	.11¾	.10¾	.11	73,000
Victory Trl.	1	.06	.08	.06¾	.07¾	.06	.07	.03¾	.06¾	.06	.07	06	08	500
Waterloo	0.10	.08¾	.10¾	.09¾	.11	.16	.14¾	.10	11¾	09¾	12	.08¾	.12	9,000
White Bear	1	.03¾	.04¾	.04	.05	04	.05	.04	.4¾	04¾	.04¾	.04¾	.4	4 ,700
Winnepeg	1	29	.35	.29¾	34	29¾	35	.31	.34	3¢	.35	.29	35	.....
Wonderful	1	.06	.08¾	.05	.08	.05	.08	.08	.....	05	.08	.06	.07¾	1,000
Develop Co														
B.C.G.Fi'lds	1	.04	.05¾	.04¾	.05	.04¾	.05¾	.04¾	.05	.04	.05¾	.04¾	.07¾	9,000
Gold Hills	1	.08¾	.09¾	09	.09¾	.09	10¾	.08¾	.09¾	.07	.09¾	.08	.09	138,70

*Official quotations of the Standard and Toronto Mining and Industrial Exchanges. Total shares sold, 464,300.

SALT LAKE CITY, UTAH.* Aug. 26.

STOCKS.†	No. of shares	Par val.	Bid.	Asked.	STOCKS.†	No. of shares.	Par val.	Bid.	Asked
Ajax	300,000	$10	$1.15	$1.60	Homestake	400,000	$1	$0 12½	$0 13¼
Alice	400,000	25	.60	1.20	Horn Silver	400,000	25	1.22½	2.00
Anchor	150,000	10	.50	.....	Joe Bowers	400,000	1	.05¾	.20¾
Buckeye	500,000	1	.02¾	.03¾	Little Pittsburg	400,000	5	.05¾	.05¾
Bullion-Beck & Ch.	100,000	10	5.00	6.00	Lower Mammoth	150,000	1	.29¾	.30¾
Centennial Eureka	90,000	50	65 00	69.00	Mammoth	400,000	5	2.03½	2.04
Chloride Point	500,000	1	.45	.55	Mercur	200,000	25	7 00	7.19
Daisy	500,000	3	.25¾	.26½	Northern Light	400,000	5	37	.37¾
Dalton	500,000	5	.....	.02½	Omaha	300,000	2	23	.....
Dalton & Lark	2,500,000	1	.10¾	.10¾	Ontario	150,000	100	7.80	9.90
Daly	150,000	20	1.40	1.49	Richmond-An.	500,000	1	10	.....
Daly West	150,000	20	12.3	12 47	Sacramento	1,000,000	5	47½	48
Dexter	200,000	5	2.00	2.50	Silver King	150,000	20	49 00	.....
Eagle	150,000	1	.06	.08	Star Consolidat'd	500,000	1	.53¼	.66
Eagle & Blue Bell	250,000	1	1.62½	1.89	Sunbeam	250,000	1	.49¾	.51½
Emerald	300,000	1	.10¾	.13	Sunshine	250,000	10	.84½	.57¾
Four Aces	250,000	1	.26	.30	Swansea	100,000	5	4 25	4 60
Galena	100,000	10	.37¾	.38¼	South Swansea	150,000	1	1.55	1 80
Geyser-Marion	300,000	5	.46¾	46¾	Utah	100,000	1	.40	1.20
Grand Central	250,000	1	7 51	7.67½	Valeo	200,000	10	.8)	.90

*From Our Special Correspondent. † Utah companies. ‡ Mines in Vanderbilt, Cal. Mines in Tuscarora, Nev.

ROSSLAND, BRITISH COLUMBIA.* Aug. 24.

NAME OF COMPANY.	No. of shares.	Par value.	Selling price.	NAME OF COMPANY.	No. of shares.	Par value.	Selling price.
Brandon & Gold. Cr.	1,500,000	$1	$0.25	Lerwick	500,000	$1	$0.10
Brit. Amer. Corp'at'n	7,500,000	5	5.75	Lily May	1,000,000	1	10
Brit.Col. Dev. Co	1,500,000	2½	.....	Lon.&Van.Fin.Dev.Co	500,000	5	.....
Canadian Gold Fields	10,000,000	0.10	.10	London B. C. Gold F.	250,000	5	7.50
Cariboo	1,500,000	1	1.35	Monte Cristo	1,000,000	1	.....
Commander	500,000	1	.....	New Gold Fields, B.C.	250,000	1	5.00
Deer Park	1,000,000	1	.....	Novelty	1,000,000	1	.....
Dundee	1,000,000	1	15	Queen Bess Prop	120,000	5	5.00
Evening Star	1,000,000	1	.10	Rambler Con	1,000,000	1	.30
Fern	200,000	¼	.50	Reco	1,200,000	1	.....
Gold Fields of B.C.	3,000,000	3½	5.00	Red Mt.View	1,000,000	1	.....
Hall Mines	250,000	5	3.00	St. Elmo	1,000,000	1	.05
Hattie Brown	1,000,000	1	.....	St. Paul	1,000,000	1	.....
Homestake	1,000,000	1	.10	Sarah Lee	1,000,000	1	.....
Iron Colt	1,000,000	1	.....	Silver Queen	1,500,000	1	.15
Iron Horse	1,000,000	1	.....	Slocan Star	500,000	1	1.25
Iron Mask	500,000	1	.67	Vic.Tr. MinesDev. Co.	25,000	5	.....
Josie	700,000	1	.....	Virginia	500,000	1	.....
Jumbo	500,000	1	.15	War Eagle Con	2,000,000	1	3.65
Kenneth	1,000,000	1	.....	Waverly Mines	100,000	5	.....
Keystone	1,500,000	1	.....	White Bear	3,000,000	1	.10
KootenayGold Fields	20,000	5	.....	Wild Horse	400,000	1	.....

* From Our Special Correspondent.

MEXICO. Aug. 18.

NAME OF COMPANY.	No. of shares.	Last div'd.	Prices. Op'g	Prices. Cl'g.	NAME OF COMPANY.	No. of shares.	Last div'd	Prices. Op'g.	Prices. Cl'g.
Chihuahua:					Hidalgo:				
Gloria	1,500	.....	$50	$50	Real del Monte	2,554	10 00	750	700
Durango:					San Francisco He	6,000	2.00	190	190
Barradon y Cab	2,400	.....	40	40	San Rafael y An.	1,200	10.00	1,100	1,000
Candelaria de Pan.	1,200	.....	20	20	do. aviado	1,200	6.00	420	400
Capuzaya	2,400	.....	30	30	do. del Oro	3,000	5.00	20	20
Penoles	2,500	30.00	2,000	2,000	Soledad	960	5.00	20	360
Restauradora	10,000	.....	20	20	Sorpresa	960	5.00	240	240
Rosario y Anexas	4,800	.....	10	10	Union Hacienda	2,000	5.00	0	360
Guanajuato:					Mexico:				
Angustias	2,400	5.00	315	320	Coronas	500	.....	75	75
Cinco Senores y An	2,000	15.00	335	340	Esperanza y An.	3,000	10.00	1,520	1,550
El Oro	500	.....	30	30	Michoacan	1,000	.....	.....	.....
do. pref	2,000	.....	30	30	Luz de Borda ava	4,000	.....	30	30
Guadalupe Hacie'a	10,000	5.00	230	210	Pueblo:				
Trinidad, aviador	2,000	.....	60	50	Tlauzingo	2,400	.....	27	28
do. aviada	400	.....	6	40	S. Luis Potosi:				
Zona Minera de Paz	2,400	.....	65	60	Concep. y An.	3 000	.....	1'0	335
Hidalgo:					Sta.MariadelaPaz	2,400	10.00	720	840
Amistad y Concord.	9,600	1.52	25	20	Zacatecas:				
Arevalo	720	.....	20	200	Asturiana y An.	2,500	10.00	175	195
Bartolome de Med.	2,000	3.00	65	70	Cabezon	2,400	.....	15	15
Carmen	1,100	7.75	450	400	C'delar. de Pinos.	2,500	.....	150	200
Luz de Maravillas	800	.....	150	120	Palma de Somb.	2,400	.....	80	100
Pabellon	800	27.89	20	30					

NOTE.—In most of the older Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Many newer companies have a nominal par value, usually $50 or $100. Prices are in Mexican dollars.

PARIS. Aug. 10.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Op'ning.	Prices. Closing.
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	75.00	2,0 5.0	2,030.00
" " Firminy	"	" "	3,000,000	500	85.00	3,680 00	3,575.0
" " Five-Lille	"	" "	12,000,000	500	35.00	560.00	574.00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	4,4 0.00	4,4 0.00
" " la Marine	France	Steel mfrs.	20,000,000	500	40.00	1,675.00	1,685.00
" " Longwy	"	" "	.....	500	35.00	1,260.0.	1,274.00
Anzin	"	Coal	.....	.....	190.00	5,910.0	5,910.00
Blache-St. Vaast	"	Steel	.....	1,000	160.00	3,8 0.00	3,8 0.00
Bolco	Lower Cal.	Copper	.....	500	1.07	2,640.0	2,625.00
Briansk	Russia	Coal & Iron	.....	500	.....	1,265.0	1,235.00
Bruay	France	Coal	3,000,000	400	900.00	45,000.00	45,000.00
Cape Copper	S. Africa	Copper	15,000,000	50	1.50	111.00	111.00
Champ d'Or	"	Gold	3,375,000	25	3.75	49.50	47.50
Courrieres	France	Coal	60,0.0,000	500	60.00	2,475.00	2,510.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	705.00	7 5.1
Denain-Anzin	France	Steel	.....	500	20.00	970.00	995.00
Dombrowa	Russia	Coal	.....	500	12.50	1,075.00	1,060.00
Donetz	"	Steel	.....	.....	.....	1,342.50	1,305.00
Dourges	"	Coal	.....	1,000	300.00	24,900.00	24,9 0.00
Dynamite Centrale	France	Explosives	.....	500	12.50	510.00	510.00
Epinac	"	Coal	.....	2,500	30.83	575.00	560.00
Escombrera-Bleyberg	Spain	Lead	.....	500	35.00	1,055.00	1,042.00
Fraser River	Brit. Col'mb	Gold	250,000	25	.....	7.00	7.00
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	51.00	50.50
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	9 1.0	86.00
Lagunas	Chile	Nitrates	16,250,000	125	12.50	290.00	290.00
Laurium	Greece	Zinc & lead	16,300,000	500	30.00	610.00	615.00
Lautaro	Chile	Nitrates	13,750,000	125	.....	9 .00	107.00
Malfidano	Italy	Zinc	12,500,000	500	40.00	1,335.00	1,315.00
Metaux, Cie. Fran. de	France	Metal d'iers.	25,000,000	500	30.00	528.00	525.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	1,240.00	1,230 00
Naphte Baku	Russia	Petroleum	.....	.....	.....	539.00	8.0.0
Naphte, Le	"	"	.....	.....	.....	2,000.0.	2,000.00
Naphte Nobel	"	"	.....	.....	.....	642.50	657.50
" " parts	"	"	.....	.....	.....	12,9 0.00	13,2 0.00
Nickel	N.Caled'nia	Nickel	10,000,000	250	30.00	393.00	380.00
Penarroya	Spain	Coal, etc	.....	500	65.00	2,470.00	2,450.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	5.50	5.75
Rio Tinto	Spain	Copper	40,625,000	125	47.70	1,144.00	1,145.00
" " preferred	"	"	40,625,000	125	.....	150.00	150.00
Rive-de-Gier	France	Coal	.....	.....	.....	23.75	24.00
Robinson	S. Africa	Gold	68,750,000	125	12.50	270.00	265.00
St. Etienne	France	Coal	.....	.....	18.00	472.00	470.00
Salines de l'Est	France	Salt	.....	500	11.50	260.0	260.00
Salines du Midi	France	" etc	.....	500	25.00	875.00	875.00
Sels Gem.de la Rus. Mer	Russia	" etc	.....	500	25.00	540.00	540.00
Tharsis	Spain	Copper	33,750,000	50	8.75	206.50	206.00
Vicoigne-Neux	France	Coal	.....	1,000	700.00	24,100.00	24,125.00
Vielle Montagne	Belgium	Zinc	9,000,000	50	30.00	832.50	811.25

STOCK QUOTATIONS.

LONDON.

Aug. 18.

NAME OF COMPANY.	Country.	Authorised capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers
			£ s. d.	s.d.		£ s. d.	£ s. d.
Alaska Goldfields	Alaska	£300,000	1 0 0	2 1	Mar., 1899	1 1 3	1 3 9
Alaska-Mexican, g	"	200,000	1 0 0	0 4.8	July, 1899	17 6	1 2 6
Alaska Treadwell, g	"	1,000,000	5 0 0	1 6	July, "	5 2 6	5 7 6
Anaconda, c., s	Montana	6,000,000	5 0 0	5 1¼	May, 1899	11 10 0	11 12 6
Chiapas, g., s., c	Mexico	252,500	1 0 0	.....	.....	5 0	7 0
Con. Gold Fields	"	300,000	1 0 0	.....	.....	15 0	1 0 0
De Lamar, g., s	Idaho	400,000	1 0 0	6	May, 1899	2 6	5 0
Elkhorn Priority (New), s	Colorado	87,500	1 0 0	1 0	June, 1898	3	3 9
Golden Gate, g	California	80,000	1 0 0	.....	.....	1 0	2 0
*Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Aug., 1899	1 1 3	1 3 9
Hall Mines, c., s	British Col	250,000	1 0 0	1 0	May, 1898	10 0	12 6
Le Roi, g	"	1,000,000	5 0 0	.....	.....	7 0 0	7 2 6
Lillie, g	Colorado	250,000	1 0 0	2½	Sept., 1899	1 2 6	1 7 6
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	3 6	4 6
Mountain Copper	California	1,250,000	5 0 0	2 6	Sept., 1898	7 17 6	8 2 6
Newfoundland, c	Newfoundland	250,000	1 0 0	.....	.....	12 6	17 6
Palmarejo & Mexican, g., s	Mexico	800,000	1 0 0	.....	.....	2 0	3 0
Plumas-Eureka, g	California	261,250	2 0 0	0 6	Oct., 1896	1 3	2 6
Richmond, g., s., l	Nevada	270,000	5 0 0	1 0	Dec., "	5 0	6 3
Sierra Buttes, g	California	245,000	2 0 0	0 6	Apr., "		1 0
Colomb. Hydraulic, g	Colombia	75,000	1 0 0	6	Jan., 1899	5 0	7 6
Copiapo, c	Chile	200,000	2 0 0	6 0	July, 1899	3 12 6	3 17 6
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	June, 1899	2 2 6	2½ 5 0
St. John del Rey, g	Brazil	600,000	1 0 0	1 3	June, 1899	1 7 6	1 8 6
Tolima A., s., g	Colombia	70,000	5 0 0	5 0	July, 1897	2 5 0	2 15 0
Tolima B., s., g	"	90,000	5 0 0	10 0	"	1 0 0	1 5 0
UtahCon. g (HighFlndBoy)	Utah	300,000	1 0 0	rts.	Mar., 1898	9 5 0	9 15 0
Velvet, g	British Col'mbia	100,000	1 0 0	.....	.....	1 8 9	1 11 3
Ymir, g	"	200,000	1 0 0	.....	.....	1 2 6	1 5 0
British Am. Corp.	"	1,500,000	1 0 0	rts.	Dec., 1898	1 5 0	1 6 6
Linares, l	Spain	45,000	3 0 0	12 6	Mar., 1899	7 10 0	8 10 0
Mason & Barry, c., sul	Portugal	630,000	2 0 0	5 0	May, 1899	3 12 6	3 17 6
Rio Tinto, c	Spain	1,625,000	5 0 0	1 7 6	May, 1899	44 15 0	45 0 0
" " pref	"	1,625,000	5 0 0	2 6	May, 1899	6 3 9	6 6 3
Tharsis, c	"	1,250,000	2 0 0	1 0	" 1898	7 15 0	8 5 0
Libiola, c	Italy	252,000	5* 0 0	2 6	June, 1899	1 15 0	2 0 0
†Assoc. Gold Mines	W. Australia	500,000	1 0 0	rts.	Aug., 1899	14 12 6	13 15 0
Broken Hill Prop., s	N.S.Wales	384,000	* 5 0	3 0	Aug., 1899	2 5 0	2 6 3
Great Boulder, Prop	W. Australia	1,750,000	1 2 0	1 6	July, 1899	1 16 6	1 17 6
*Hannan's Brownhill, g	"	110,000	1 0 0	7 6	Aug., 1899	14 0 0	14 5 0
Ivanhoe Gold Corp	"	1,000,000	5 0 0	5 0	July, 1899	17 7 6	17 12 6
Kalgurlie, g	"	120,000	1 0 0	rts.	Feb., 1899	3 0 0	13 5 0
*Lake View Consols, g	"	250,000	1 0 0	21	Aug., 1899	26 15 0	27 0 0
Mt. Lyell M. & R., l., c	Tasmania	975,000	3 0 0	3 0	July, 1899	10 15 0	11 0 0
*Mt. Morgan, g	Queensland	1,000,000	1 0 0	7	Aug., 1899	5 5 0	5 12 6
Waihi, g	New Zealand	320,000	1 0 0	2 0	Sept., 1899	7 3 9	7 6 3
West Aust. Jt. Stk. L. & F	W. Australia	1,000,000	1 0 0	1 0	Dec., 1898	7 0 0	7 5 0
Champion Reef, g	Colar Fields	220,000	10 0 0	3 6	May, 1899	5 5 0	5 7 6
Mysore Gold, g	"	250,000	10 0 0	4 0	July, 1899	5 7 6	5 10 0
Nundydroog, g	"	242,000	1 0 0	2 0	" 1899	2 17 6	3 0 0
*Ooregam, g	"	145,000	1 0 0	6	Aug., 1899	3 13 9	3 16 3
" pref. g	"	120,000	1 0 0	2 6	" 1899	4 10 0	4 12 6
Angelo, g	Transvaal	275,000	1 0 0	5 0	Mar., 1899	7 5 0	7 10 0
Bonanza, g	"	200,000	1 0 0	1 0	June, 1898	4 7 6	4 10 0
British S. Af., chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 2 6	3 3 9
Cape Copper, c	"	600,000	1 0 0	5 0	July, 1899	4 0 0	4 5 0
" pref	"	150,000	2 0 0	5 0	" 1899	4 2 6	4 12 6
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	8 0	Aug., 1899	6 1 3	6 3 9
Con Deep Level, g	"	200,000	1 0 0	x all.	June, 1898	1 10 0	1 15 0
Crown Reef, g	"	120,000	1 0 0	10 0	May, 1899	16 15 0	17 10 0
De Beers Con., d	Cape Colony	3,250,000	5 0 0	21	June, 1899	28 0 0	28 5 0
Durban Roodepoort, g	Transvaal	135,000	1 0 0	5	July, 1899	6 0 0	6 5 0
*Ferreira, g	"	90,000	1 0 0	30 0	Feb., 1899	23 0 0	23 10 0
*Geldenhuis Deep, g	"	350,000	1 0 0	8 0	Aug., 1899	10 2 6	11 7 6
*Geldenhuis Est., g	"	200,000	1 0 0	7 6	" 1899	7 2 6	7 7 6
Ginsberg, g	"	160,000	1 0 0	4 0	Feb., 1899	3 13 9	3 16 3
*Henry Nourse, g	"	125,000	1 0 0	5 0	Aug., 1899	6 6 3	6 7 6
Heriot (New), g	"	115,000	1 0 0	5 0	Aug., 1899	7 0 0	7 5 0
Jagersfontein, d	Orange Fr. St	1,000,000	5 0 0	9 0	June, 1899	13 17 6	14 2 6
§Johannesburg Con. Invst	So. Africa	2,750,000	1 0 0	2 0	Aug., 1897	1 13 9	1 16 3
Jubilee, g	Transvaal	50,000	1 0 0	5 0	Aug., 1899	6 10 0	6 15 0
* Jumpers, g	"	100,000	1 0 0	5 0	Aug., 1899	5 7 6	5 12 6
Kleinfontein, g	"	275,000	1 0 0	2 0	Mar., 1899	2 15 0	3 17 6
Langlagte Estate, g	"	500,000	1 0 0	3 0	June, 1899	3 7 6	3 12 6
*May Con., g	"	275,000	1 0 0	6 9	Aug., 1899	5 1 3	5 3 9
Meyer & Charlton, g	"	85,000	1 0 0	8 0	July, 1899	6 0 0	6 5 0
Namaqua, c	Cape Colony	200,000	1 0 0	6 6	June, 1899	4 0 0	4 5 0
§Primrose (New), g	Transvaal	300,000	1 0 0	6 0	Feb., 1899	4 11 3	4 15 0
*Rand Mines, g	So. Africa	400,000	1 0 0	15 0	Aug., 1899	39 15 0	40 0 0
*Robinson, g	Transvaal	2,750,000	5 0 0	8 0	Aug., 1899	9 15 0	10 0 0
Sheba, g	"	1,100,000	1 0 0	0 6	July, 1898	1 1 3	1 3 9
Sim. & Jack Prop., g	"	5,000,000	5 0 0	4 0	July, 1899	6 10 0	6 12 6
Wemmer, g	"	80,000	1 0 0	15 0	June, 1899	13 15 0	14 5 0
Wolhuter, g	"	80,000	1 0 0	2 0	Feb., 1899	4 17 6	5 2 6
§Worcester, g	"	100,000	1 0 0	3 0	July, 1899	3 0 0	3 5 0

§ Dividend pending. * Ex-dividend. † Ex-rights.

MEETINGS.

NAME OF COMPANY.	Location.	Meeting.	Date.	Place of Meeting.
Butte & Boston	Montana.	Annual.	Oct. 2.	Butte, Mont.
Camp Floyd	Utah	"	Sept. 4.	417 McCornick Bldg., Salt Lake City, Utah.
Chrysolite	Colorado.	"	Nov. 3.	80 Broadway, New York City.
Con. Cal & Va.	Nevada.	"	Oct. 21.	San Francisco, Cal.
Con. G. Gate & Sulph	California	"	Sept. 12.	San Francisco, Cal
Edwin Booth	Colorado.	"	Sept. 30.	142 Curtis st., Denver, Colo.
Fortune	Colorado.	"	Sept. 13.	16th & Blake sts., Denver, Colo.
Great Western, q.	California	"	Nov. 6.	530 California st., San Francisco, Cal.
Horn Silver	Utah	"	Oct. 5.	Salt Lake City, Utah.
Kellogg Creek	California	Special.	Sept. 11.	328 Montgomery st., San Francisco, Cal.
Nettie Dutcher	Colorado	"	Sept. 19.	Denver, Colo.
Siskiyou Con	California	Annual.	Nov. 4.	306 Pine st, San Francisco, Cal.
Quincy	California	"	Sept. 7.	439 California st., San Francisco, Cal.

ASSESSMENTS.

NAME OF COMPANY.	Location.	Sec.	Dlq.	Sale.	Amt.	OFFICE.
			Aug.			
Alpha Con	Nev..	22	16	Sept. 7	.03	309 Montgomery st., San Francisco.
Belcher	Nev..	61	16	Sept. 6	.10	Mills Bldg., San Francisco, Cal.
Cedar Valley	Utah	1	22	Sept. 8	.00½	Atlas Block, Salt Lake City.
Challenge Con	Nev..	27	22	Sept. 12	.10	Mills Bldg., San Francisco, Cal.
Chollar	Nev..	49	24	Sept. 14	.15	Mills Bldg., San Francisco, Cal.
Ely	Utah	2	22	Sept. 11	.01	150 Main st., Salt Lake City.
Geyser	Colo.	..	24	Sept. 25	.10	31 Milk st., Boston, Mass.
Homestake	Utah	..	30	Sept. 18	.00½	163 South Main st., Salt Lake City.
Marguerite	Cal.	14	28	Sept. 25	.10	237 12th st., San Francisco.
R. G. W	Utah	2	17	Nov. 4	.01	34 W. 2d South st., Salt Lake City.
Sailor Con	Cal.	1	21	Sept. 18	.11	318 Front st., San Francisco.
Sierra Nevada	Nev..	116	18	Sept. 7	.15	309 Montgomery st., San Francisco.
South Bingham	Utah	...	7	Sept. 20	.00¼	46½ W. 2d South st., Salt Lake City.
			Sept.			
Acorn	Utah	1	23	Oct. 14	.00½	Wells, Fargo Bank, Salt Lake City.
Alaska	Utah	...	15	Oct. 14	.01½	714 McCornick Bldg., Salt Lake City
Alexandria	S. D.	...	18	Oct. 6	.005	H. H. Armstrong, Jr. Galena, S. D.
Central Eureka	Cal..	13	1	Sept. 25	.03	320 Sansome st., San Francisco, Cal.
Con. St. Gothard	Cal..	...	12	.....	.05	.....
Eureka Con. D	Cal..	29	12	Sept. 30	.00½	1,209 Claus Spreckels Bldg., S. Fra'co
Excelsior	Cal..	...	11	.....	.05	.....
Ford	Cal..	...	11	.....	.01	.....
Galena Treasure	S. D.	...	18	Oct. 6	.002	H. H. Armstrong, Jr., Galena, S. D.
Humboldt	Cal..	...	11	.....	.02	.....
International	Utah	...	5	Sept. 25	.01	117 S. W. Temple st., Salt Lake City.
La Suerte	Cal..	...	8	.....	.22	.....
Little Chief	Utah	1	9	Sept. 26	.01	161 South Main st., Salt Lake City.
Live Yankee	Cal..	...	9	.....	.01	Grainteville, Cal.
Madge	S. D.	...	18	Oct. 6	.002	H. H. Armstrong, Jr., Galena, S. D.
Maripsa C'l & Mg	Cal	12	5	Sept. 29	10.00	320 Sansome st., San Francisco.
Meteor	Utah	...	5	Oct. 10	.00½	304 Dooly Bldg., Salt Lake City.
National Con	Cal..	8	18	Oct. 11	.10	773 Mission st., San Francisco.
New Klondike	Utah	...	12	Sept. 28	.00½	310 McCornick Block, Salt Lake City
Occidental Con	Nev..	33	5	Sept. 28	.05	309 Montgomery st., San Francisco.
Old Home	Cal..	...	11	.....	.01	.....
Orleans	Cal..	9	8	Oct. 3	.05	324 Pine st., San Francisco.
Overman	Nev..	3	22	Oct. 13	.05	414 California st., San Francisco.
Potosi	Nev..	53	14	Oct. 5	.15	309 Montgomery st., San Francisco.
Powning	Cal..	...	12	.....	.00¼	.....
Savage	Nev..	98	6	Sept. 26	.10	309 Montgomery st., San Francisco.
Tetro	Utah	9	16	Oct. 7	.01	617 McCornick Block, Salt Lake City
Union Con	Nev..	58	6	Sept. 25	.15	309 Montgomery st., San Francisco.
Utah Con	Nev..	31	7	Sept. 28	.05	309 Montgomery st., San Francisco.
Willow Creek	S. D.	...	7	Sept. 22	.01	Le Mars, Iowa.

DIVIDENDS.

NAME OF Co.	Date.	Am't.	Paid 1899.	Grand Total.
Alamo, Utah	.....	.....	$2,500	$2,500
Alaska-Mexican	.....	.....	54,000	411,031
Alaska-Treadwell	.....	.....	225,000	4,145,000
Ætna Con	.....	.....	30,000	180,000
American Coal	Sept.1	$75,000	150,000	727,500
American Gold	.....	.....	48,000	434,000
Am. Zinc-L. & Sm.	.....	.....	20,000	20,000
Aracoma Copper	.....	.....	1,500,000	9,750,000
Anchoria-Leland	.....	.....	54,000	216,000
Apollo Con., Alas	.....	.....	40,000	140,000
April Fool, Nev	.....	.....	6,000	6,000
Argonaut, Col	.....	.....	163,000	340,000
Associated, Colo	.....	.....	12,000	84,000
Aurora Iron	.....	.....	50,000	800,000
Bald, Butte	.....	.....	75,000	724,648
Bonanza, Wash	.....	.....	2,500	2,500
Bona'za Dev., N.M	.....	.....	1,050,000	1,500,000
Boston-Aurora	.....	.....	10,656	10,656
Boston-Duenweg, z	.....	.....	16,000	16,000
Boston-LittleC. Zn	Sept.1	10,000	40,000	40,000
Boston-Provid'nce	Sept.4	750	9,000	9,000
Boston & Cal	.....	.....	72,000	72,000
Boston & Mont	.....	.....	3,150,000	12,275,000
Breece	Sept.1	10,000	30,000	60,000
Bul. Bec. & Champ	.....	.....	80,000	2,398,400
Bunker Hill & S	.....	.....	105,000	705,000
Calumet & Hecla	.....	.....	6,000,000	62,850,000
Cariboo-M'Kinney	.....	.....	75,000	311,955
Centenn'l Eureka	.....	.....	120,000	2,150,000
Central Lead	.....	.....	40,000	122,000
Charleston, S. C	.....	.....	20,000	200,000
Colorado Sm	.....	.....	100,000	1,945,000
Colonial Lead, Mo	.....	.....	10,000	10,000
Consolidation Coal	.....	.....	205,000	5,716,650
D'r Tr'l No. 2, Wash	.....	.....	20,000	37,500
Doe Run, Mo	.....	.....	20,000	89,000
De Lamar, Idaho	.....	.....	48,000	2,346,000
El Dorado, Cal	.....	.....	10,000	10,000
Empire State, Ida	Sep.15	24,628	167,473	229,375
Fanny Rawlings	.....	.....	20,000	20,000
Ferris-H'g'ty, Wyo	.....	.....	5,000	5,000
Garfield Con	.....	.....	12,000	34,000
Gold Coin, Vict	.....	.....	80,000	230,000
Golden Cycle	.....	.....	$65,000	$218,500
Golden Eagle, Col	.....	.....	5,000	5,000
Gold King, Col	.....	.....	60,000	60,000
Golden M. & Ex	.....	.....	10,000	10,000
Golden Star, Ont	.....	.....	41,000	41,000
Grand Central, Ut	Sept.1	$60,000	347,500	668,250
Grass Valley Ex	.....	.....	22,500	22,500
Gwin, Cal	Sept.8	5,000	35,000	86,500
Helena & Frisco	.....	.....	125,000	550,000
Hidden Treas., Cal	.....	.....	3,600	3,600
High Five, Colo	.....	.....	10,000	10,000
Holy Terror	.....	.....	25,000	142,000
Homestake	.....	.....	542,500	7,723,750
Horn Silver	.....	.....	40,000	5,270,000
Idaho. B. C	.....	.....	28,000	292,000
Isabella	.....	.....	180,000	450,000
Jack Pot	.....	.....	25,000	25,000
Jamison, Cal	.....	.....	11,700	50,700
Ky. J., C. & Mfg	.....	.....	10,980	164,041
Lake Superior Ir	.....	.....	84,000	227,860
Last Chance, B. C	.....	.....	25,000	45,000
Lillie	Sept.1	11,250	101,250	267,860
Mammoth	.....	.....	120,000	1,470,030
Marion Con., Colo	.....	.....	5,000	300,000
Mead, Cal	.....	.....	40,000	120,000
Mercur	.....	.....	50,000	1,291,000
Mo. Zinc Fields, pfd	.....	.....	7,992	7,992
Modoc	Sept15	10,000	90,000	170,000
Montana, Ltd	.....	.....	98,855	453,700
Mont. Ore Pur	Sept27	80,000	480,000	1,280,000
Morning Star, Cal	.....	.....	49,200	737,400
Moulton, Mont	.....	.....	20,000	480,000
Mt. Shasta, Cal	.....	.....	6,000	6,000
Napa Con	.....	.....	60,000	1,010,000
New Central Coal	.....	.....	20,000	470,000
New Idria	.....	.....	60,000	140,000
N.Y. & H.-Rosario	.....	.....	105,000	1,095,000
North Star, Cal	.....	.....	50,000	550,000
Olive	.....	.....	12,000	12,000
Orig. Empire, Cal	.....	.....	50,000	500,000
Osceola	.....	.....	279,000	2,801,500
Parrot	.....	.....	552,000	2,690,898
Pennsylvania Cal	.....	.....	36,050	95,275
PennsylvaniaCoal	.....	.....	$800,000	$14,050,000
Petro, Utah	.....	.....	5,000	22,500
Pioneer, Cal	.....	.....	12,500	62,500
Portland	.....	.....	480,000	2,317,080
Queen Bess, B. Col	.....	.....	12,150	12,150
Quicksilver (Pref.)	.....	.....	21,500	1,845,411
Quincy	.....	.....	950,000	11,070,000
Rambler Cariboo	.....	.....	10,000	50,000
Raven, Colo	Sep 20	$10,000	10,000	29,500
Republic, Wash	Sept15	31,500	157,500	323,000
Royal, B. C	.....	.....	50,000	1,050,000
Sacramento	Sept.1	5,000	45,000	133,000
St. Joseph Lead	.....	.....	75,000	2,859,500
Silver King	.....	.....	375,000	2,200,000
Small Hopes	.....	.....	25,000	3,325,000
Smuggler	.....	.....	80,000	1,175,000
South Swansea	.....	.....	30,000	142,500
Standard, Cal	.....	.....	40,000	3,879,226
Standard, Ida	.....	.....	30,000	1,745,000
Swansea	.....	.....	40,000	231,000
Tamarack	.....	.....	240,000	5,910,000
Tomboy	.....	.....	80,000	730,000
United Z. & L., pfd	.....	.....	20,000	20,000
Utah, Utah	.....	.....	2,000	179,000
Vindicator	.....	.....	126,875	253,750
War Eagle, B. C	Sept15	26,250	236,250	414,000
Weatherly Bonanza, Wash	.....	.....	1,562	1,562
Wolverine	Oct. 2	120,000	210,000	270,000
Yellow Aster	.....	.....	65,000	233,789
Grand Total	.....	.....	$479,378	$20,995,088	197,018,131

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Etna Cons., q	Cal	$500,000	100,000	$5	*				$180,000	July	1899	.10
2	Alaska-Mexican, g	Alask	1,000,000	200,000	5					411,081	July	1899	.10
3	Alaska-Treadwell, g	Alask	5,000,000	200,000	25	*				4,145,000	July	1899	.37½
4	Alamo, g. c. i	Utah	125,000	125,000	1	$937	Mar.	1898	.00¼	2,500	April	1899	.02
5	Alice, g. s	Mont.	10,000,000	400,000	25	*				1,075,000	April	1898	.05
6	American Coal	Md	1,500,000	60,000	25					727,500	Sept.	1899	1.25
7	American Gold, g. s. c. l	Colo.	3,000,000	300,000	10	*				434,000	June	1899	.09
8	Am. Zinc, Lead & Sm	Mo	500,000	200,000	25					20,000	July	1899	.10
9	Anaconda Copper	Mont.	30,000,000	1,200,000	25					9,750,000	May	1899	1.25
10	Anchoria-Leland, g	Colo.	600,000	600,000	1	*				198,000	April	1899	.03
11	Appie Ellen, g	Colo.	600,000	600,000	1					25,000	Aug.	1898	.01
12	April Fool	Nev.	500,000	500,000	1					6,000	Aug.	1899	.01
13	Argonaut	Cal	2,000,000	200,000	10					340,000	Aug.	1899	.10
14	Associated, g	Colo.	1,250,000	1,250,000	1	*				84,000	Feb.	1899	.01
15	Atlantic, c	Mich.	1,000,000	40,000	25					780,000	Feb.	1898	1.00
16	Aurora, l	Mich.	2,500,000	100,000	25	*				890,000	June	1899	.50
17	Bald Butte	Mont.	250,000	250,000	1	*				724,648	July	1899	.06
18	Big Six, g. s	Colo.	500,000	500,000	1					15,000	May	1898	.00½
19	Bonanza, Dev	NMex	3,000,000	300,000	10					1,500,000	June	1899	3.50
20	Boston-Aurora, pref	Mo	800,000	32,000	25					10,656	Aug.	1899	.17
21	Boston & California	Cal	600,000	600,000	1					72,000	June	1899	.06
22	Boston-Little Circle, z.	Mo-K	1,000,000	100,000	10	*				30,000	Aug.	1899	.10
23	Boston & Mont. Con	Mont.	3,750,000	150,000	25	*				12,275,000	Aug.	1899	10.00
24	Breece, l	Colo.	5,000,000	200,000	25					60,000	Sept.	1899	.05
25	Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	*				2,398,400	Aug.	1899	.10
26	Bunker Hill & S., s. l	Idaho	3,000,000	300,000	10					705,000	May	1899	.07
27	Calumet & Hecla, c	Mich.	2,500,000	100,000	25					62,850,000	June	1899	20.00
28	Centen'l-Eureka, g.s.l.c	Utah.	1,500,000	30,000	50	30,000	Mar.	1889	1.00	2,150,000	Aug.	1899	.50
29	Central Lead, l	Mo	1,000,000	10,000	100	*				122,000	Aug.	1899	.50
30	Champion, g. s	Cal	340,000	34,000	10					296,200	April	1898	.25
31	Charleston, p. r	S. C	1,000,000	10,000	100	*				200,000	June	1899	2.00
32	Consolidation Coal	Md	10,250,000	102,500	100					5,716,650	Feb.	1899	2.00
33	Con. Tiger & Poorman	Idaho	1,000,000	1,000,000	1	*				20,000	Dec.	1898	.02
34	Crœsus, g	Cal	1,000,000	200,000	5					30,000	Dec	1898	.15
35	Crowned King, g. s. l	Ariz	6,000,000	600,000	10	*				232,000	Dec	1898	.02
36	Deadwood-Terra, g	S. D	5,000,000	200,000	25	*				1,350,000	May	1898	.15
37	De Lamar, g. s	Idaho	2,000,000	400,000	5					2,346,000	May	1899	.12
38	Deer Trail No. 2	Wash	1,000,000	1,000,000	1					37,500	Aug.	1899	.00¼
39	Doe Run, l	Mo	500,000	5,000	100					80,000	Aug.	1899	.50
40	Elkton Cons., g	Colo.	1,250,000	1,250,000	1					656,961	Nov.	1898	.01½
41	El Paso, g. s	Colo.	650,000	650,000	1					12,393	Jan.	1898	.01
42	Empire State-Idaho	Idaho	1,000,000	100,000	10					204,747	Aug.	1899	.20
43	Enterprise, s. l	Colo.	500,000	500,000	1					900,000	Sept.	1898	.05
44	Fanny Rawlings, g. s.	Colo.	1,000,000	1,000,000	1					20,000	Aug.	1899	.01
45	Ferris-Haggarty, c.g.s.	Wyo.	1,000,000	1,000,000	1					5,000	Mar.	1899	.00½
46	Garfield Con., g	Colo.	1,200,000	1,200,000	1					34,000	May	1899	.01
47	Geyser-Marion, g	Utah.	1,500,000	300,000	5					96,000	Sept.	1898	.02
48	Gold Coin of Victor, g	Colo.	1,000,000	1,000,000	1					230,000	Aug.	1899	.01
49	Golden Cycle, g	Colo.	1,000,000	200,000	5					218,500	Aug	1899	.05
50	Gold King, g	Colo.	1,000,000	1,000,000	1					60,000	July	1899	.03
51	Goldea Eagle, g	Colo.	500,000	500,000	1					5,000	July	1899	.01
52	Golden Reward, g	S. D.	1,000,000	100,000	10					155,000	Feb	1898	.15
53	Golden Star	Ont.	100,000	100,000	1					41,000	July	1899	.01
54	Grand Central, g	Utah.	250,000	250,000	1					606,250	Aug.	1899	.15
55	Grass Valley Expl	Cal	100,000	30,000	2	*				22,500	July	1899	.25
56	Gwin, g	Cal	1,000,000	20,000	50	286,000	Jan.	1898		81,500	Aug.	1899	.25
57	Helena & Frisco, l. s	Idaho	2,500,000	500,000	5	*				550,000	June	1899	.25
58	Holy Terror, g	S. D.	500,000	500,000	1					142,000	July	1899	.01
59	Homestake, g	S. D.	21,000,000	210,000	100	200,000	July	1878	1.00	7,723,750	July	1899	.50
60	Hope of St. Louis, s	Mont.	1,000,000	100,000	10	*				762,252	Mar.	1898	.10
61	Horn-Silver, g. s. c.sp.l	Utah.	10,000,000	400,000	25	*				5,279,000	July	1899	.05
62	Iowa, g	Colo.	1,000,000	1,000,000	1					95,000	June	1898	.00¼
63	Iron Mountain, g. s. l. i	Mont.	5,000,000	500,000	10	*				507,500	April	1898	.02
64	Isabella, g	Colo.	2,250,000	2,250,000	1					448,500	June	1899	.02
65	Jack Pot, g	Colo.	1,250,000	1,250,000	1					25,000	Mar.	1899	.02½
66	Jamison	Cal	3,900,000	390,000	10	144,000	Nov.	1896	.17	50,700	April	1899	.10
67	Jersey Leasing	Colo.	200,000	158,167	1					137,875	Oct	1898	.03½
68	Lake Superior Iron	Mich.	2,100,000	84,000	25					736,000	Feb	1899	1.00
69	Lillie, g	Colo.	1,250,000	250,000	5					256,630	Aug.	1899	.05
70	Mammoth, g. s. c	Utah.	10,000,000	400,000	25	*				1,470,000	Aug.	1899	.10
71	Matoa, g	Colo.	1,000,000	1,000,009	1					25,000	Dec.	1898	.02½
72	Mead, g	Cal	200,000	200,000	1					120,000	June	1899	.20
73	Mercur, g	Utah.	5,000,000	200,000	25	*				1,391,000	July	1899	12½
74	Minnesota Iron	Minn.	16,500,000	165,000	100	*				4,735,000	Oct	1898	1.50
75	Missouri Zinc Fields. pf	Mo	400,000	16,000	25					7,932	Aug.	1899	.17
76	Modoc, g	Colo.	500,000	500,000	1					160,000	Aug.	1899	.02
77	Montana, Ltd., g. s	Mont.	3,300,000	657,128	5	*				453,700	April	1899	.12
78	Montana Ore Purchas'g	Mont.	2,500,000	80,000	25	*				1,200,000	July	1899	1.00
79	Moon-Anchor Con., g	Colo.	1,750,000	600,000	1					261,000	Nov.	1898	.07½
80	Morning Star, g	Cal	240,000	2,400	100	70,800	Feb.	1887	.75	737,490	Aug.	1899	2.00
81	Monument	Colo.	300,000	300,000	1					12,624	Dec	1898	.01
82	Mt. Rosa, g	Colo.	1,000,000	1,000,000	1					60,000	Jan	1898	.02
83	Mt. Shasta	Cal	100,000	20,000	5					6,000	May	1899	.30
84	Moulton	Mont.	2,000,000	400,000	5					480,000	Feb	1899	.05
85	Mountain Copper	Cal	6,250,000	250,000	25					93,750	Sept.	1898	.62½
86	Napa Cons., q	Cal	700,000	100,000	7	*				1,010,000	July	1899	.20
87	New Central Coal	Md	1,000,000	50,000	20					470,000	April	1899	.40
88	New Idria, q	Cal	500,000	100,000	5					140,000	July	1899	.20
89	N.Y.&Hon Rosario, s.g.	C. A	1,500,000	150,000	10	*				1,095,000	Aug.	1899	.10
90	North Star, g	Cal	5,000,000	500,000	10	20,000	June	1885	.02	550,000	April	1899	.25
91	Nugget	Colo.	1,000,000	1,000,000	1					20,000	Aug.	1898	.00½
92	Orphan Bell, g	Colo.	1,000,000	1,000,000	1					115,000	Mar.	1898	.01
93	Original Empire, g	Cal	5,000,000	50,000	100	92,500	Aug.	1896	1.25	500,000	May	1899	1.00
94	Osceola, c	Mich.	2,500,000	93,000	25	*				2,801,500	June	1899	3.00
95	Parrot, c	Mont.	2,300,000	230,000	10	*				2,690,898	May	1899	1.50
96	Pennsylvania Coal	Pa	5,000,000	100,000	50					14,050,000	May	1899	8.00
97	Pennsylvania Cons	Cal	5,150,000	51,500	100	50,051	Feb.	1892	.05	95,275	Aug.	1899	.20
98	Petro, g	Utah	1,000,000	200,000	5					5,000	July	1899	.02½
99	Pioneer g	Cal	1,000,000	100,000	10					62,500	Mar	1899	.12½
100	Portland, g	Colo.	3,000,000	3,000,000	1	*				2,317,080	Aug.	1899	.02
101	Quicksilver, pref	Cal	4,300,000	43,000	100					1,845,411	May	1899	.50
102	Quicksilver, com	Cal	5,700,000	57,000	100					643,867	July	1882	.40
103	Quincy, c	Mich.	2,500,000	100,000	25	*				11,070,000	Aug.	1899	6.00
104	Raven, g	Colo.	1,500,000	1,500,000	1					19,500	Mar.	1898	.01
105	Republic Cons., g	Wash	3,500,000	3,150,000	1					291,500	Aug.	1899	.01
106	Royal Con., g	B. C.	2,500,000	2,500,000	1					1,050,300	June	1899	.01
107	Sacramento, g	Utah.	5,000,000	1,000,000	5					128,000	Aug.	1899	.00½
108	St. Joseph, l	Mo	3,000,000	300,000	10	*				2,859,500	June	1899	.50
109	Santa Rosalia, g.s	Cal	100,000	100,000	1					125,000	Feb.	1898	1.10
110	Silver King, g. s. l	Utah.	3,000,000	150,000	20	3,000	Jan.	1897	.02	2,880,000	Aug.	1899	.25
111	Small Hopes, s	Colo.	5,000,000	250,000	20	*				3,325,000	Feb.	1899	.10
112	Smuggler, s. l. z	Colo.	1,000,000	1,000,000	1					1,175,000	Aug.	1899	.01
113	South Swansea, s. l	Utah.	150,000	150,000	1					142,500	Aug.	1899	.05
114	Standard Cons., g. s	Cal	2,000,000	200,000	10	99,888	June.	1890	.50	3,879,226	Aug.	1899	.10
115	Standard	Idaho	500,000	500,000	1					1,745,000	April	1899	.05
116	Swansea, s. l	Utah	500,000	100,000	5					231,000	Aug.	1899	.05
117	Tamarack, c	Mich.	1,500,000	60,000	25					5,910,000	June	1899	4.00
118	Tomboy, g	Colo.	2,000,000	200,000	10					790,000	May	1899	4.00
119	United, z. l., pref	Mo	1,000,000	40,000	25	*				20,000	July	1899	.50
120	Utah	Utah	1,000,000	100,000	10	*				179,000	Jan.	1899	.02
121	Victor, g	Colo.	1,000,000	200,000	5	*				1,155,000	Dec.	1898	.50
122	Vindicator, Cons. g	Colo.	1,500,000	1,015,000	1					253,750	July	1899	.05
123	War Eagle, Cons	B. C.	2,000,000	1,750,000	1					387,750	Aug	1899	.01½
124	Wolverine, c	Mich.	1,500,000	60,000	25	180,000	Mar.	1895	1.00	270,000	Oct.	1899	1.50
125	Yellow Aster, g	Cal	1,000,000	100,000	10	*				233,789	July	1899	.10

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.		
1	Ada Cons., s. l	Utah.	$100,000	100,000	$1	$3,333	Nov.	1895	.01½
2	Alliance, g. s. l	Utah.	150,000	150,000	1	200,000	Dec.	1895	.10
3	Allouez, c	Mich.	2,500,000	100,000	25	1,520,937	June.	1894	1.00
4	Alpha Cons., g. s	Nev.	105,000	105,000	1	319,200	Aug.	1899	.03
5	Alta, s	Nev.	216,000	108,000	2	3,675,710	June.	1899	.05
6	Alta	Utah.	750,000	750,000	1	938	Mar.	1899	.00½
7	American Quartz, g	Cal.	1,000,000	100,000	10	1,000	Feb.	1897	.01
8	Anchor, g. s. l	Utah.	1,500,000	150,000	10	560,000	Aug.	1893	.20
9	Andes, g	Nev.	300,000	100,000	3	1,205,000	June.	1899	.05
10	Arnold, c	Mich.	1,500,000	60,000	25	180,000	Jan.	1899	3.00
11	Baliol, g	Cal.	1,000,000	100,000	10	55,000	Mar.	1898	.30
12	Belcher, s. g	Nev.	312,000	104,000	3	3,535,600	Aug.	1899	.10
13	Belle Isle	Nev.	10,000,000	100,000	100	240,271	July.	1896	.10
14	Benton Con. s	Nev.	10,800,000	108,000	100	587,023	June	1897	.25
15	Best & Belcher, g. s	Nev.	302,400	100,800	3	2,609,803	Aug.	1899	.10
16	Bogan	Utah.	1,250,000	125,000	10	26,875	Dec.	1897	.01½
17	Boston & Cp. Ck., g	Colo.	400,000	200,000	2	20,000	Aug.	1898	.10
18	Brunswick Cons., g	Cal	500,000	500,000	1	160,000	July.	1897	.03
19	Bullion, s. g	Nev.	100,000	100,000	1	3,125,000	May.	1899	.05
20	Caledonia	Utah.	300,000	300,000	3	3,210,000	Nov.	1897	.10
21	Centennial, c	Mich.	2,500,000	100,000	25	460,000	Mar.	1898	3.00
22	Central Eureka, g	Cal.	4,000,000	400,000	10	135,942	Sept.	1899	.03
23	Challenge Cons, s.g	Nev.	150,000	50,000	3	438,000	Aug.	1899	.10
24	Chollar, g. s	Nev.	336,000	112,000	3	2,076,600	Aug.	1899	.15
25	Confidence, g. s	Nev.	74,880	24,960	3	545,118	May.	1899	.20
26	Con., Cal. & Va	Nev.	540,000	216,000	2½	734,000	May.	1899	.25
27	Cons. Imperial, g. s	Nev.	500,000	500,000	1	2,251,000	July.	1899	.01
28	Con. New York	Nev.	100,000	100,000	1	160,500	Nov.	1898	.03
29	Crown Point, g. s	Nev.	300,000	100,000	3	2,980,000	May.	1899	.10
30	Dalton, s. l	Utah.	2,500,000	500,000	5	58,750	April.	1899	.01
31	Dexter	Nev.	1,000,000	200,000	5	38,000	Apr.	1898	.15
32	Diamond Con	Utah.	1,000,000	200,000	5	8,000	Mar.	1899	.04
33	Eagle, g. s	Cal	500,000	100,000	5	5,000	Dec.	1896	.05
34	Eagle, g. s	Ore	1,000,000	100,000	10	6,000	Oct.	1898	.01½
35	Emerald	Utah	300,000	300,000	1	3,000	Oct.	1898	.00½
36	Eureka Cons., g. s. l	Nev.	1,000,000	50,000	20	585,000	Sept.	1898	.20
37	Eureka Con. Drift, g	Cal	500,000	500,000	1	182,500	Sept.	1899	.00½
38	Exchequer, g. s	Nev.	1,000,000	100,000	1	1,020,000	Dec.	1897	.05
39	Florence	Utah.	1,000,000	200,000	5	1,000	June.	1899	.00¼
40	Four Aces	Utah.	250,000	250,000	1	5,000	Mar.	1898	.01
41	Galena	Utah.	1,000,000	100,000	10	10,000	Oct.	1898	.10
42	Geyser, s. l	Colo.	5,000,000	500,000	10	1,225,000	July.	1899	.10
43	Gold Belt, g. s	Utah.	500,000	500,000	1	3,012	July.	1896	.00½
44	Gold Coin	Colo.	1,000,000	200,000	5	10,000	Mar.	1899	.05
45	Golden Eagle, g	Nev.	400,000	400,000	1	4,000	April.	1899	.01
46	Golden Fleece Grav. g	Cal.	130,000	130	1000	56,260	Mar.	1897	2.00
47	Gold & Silver Carb	Utah.	500,000	500,000	1	2,500	Mar.	1899	.00½
48	Gould & Curry	Nev	324,000	108,000	5	4,625,150	July.	1899	.10
49	Granite Hill, g. s	Cal.	500,000	100,000	5	124,000	June.	1899	.03
50	Great Eastern, g	Utah.	1,500,000	300,000	5	6,500	July.	1899	.00½
51	Great Western, q	Cal.	5,000,000	50,000	100	75,520	May.	1899	.15
52	Hale & Norcross, g.s.	Nev.	11,200,000	112,000	100	5,716,280	May.	1899	.10
53	Head Center Con., s.g	Ariz.	5,000,000	200,000	25	25,125	Mar.	1899	.20
54	Horse Shoe Bar Cons	Cal	6,000,000	60,000	100	85,800	Jan.	1899	.05
55	Joe Bowers, Ext.gcls	Utah.	112,000	450,000	¼	9,000	July.	1899	.01
56	Julia Con	Nev.	110,000	110,000	1	1,498,800	Jan.	1899	.03
57	Jupiter, g	Cal.	2,000,000	20,000	100	80,000	Feb.	1898	.20
58	Justice, g. s. c	Nev.	210,000	105,000	2	3,662,500	Aug.	1899	.10
59	Kentuck	Utah.	600,000	300,000	2	30,000	Aug.	1898	.10
60	Kentuck Cons., s	Nev.	105,000	105,000	1	125,300	June.	1898	.05
61	Lacrosse, g	Colo.	1,000,000	100,000	10	*			
62	Little Pittsburg	Utah.	2,000,000	400,000	5	21,000	June.	1899	.00¾
63	Lower Mammoth	Utah.	150,000	150,000	1	22,500	June.	1899	.05
64	Lucky Bill	Utah.	300,000	120,000	2.50	56,400	June.	1898	.01½
65	Marguerite, g	Cal.	500,000	50,000	10	85,000	Aug.	1899	.10
66	Marina Marsicano, g	Cal.	1,000,000	100,000	10	49,360	June.	1899	.05
67	May Day	Utah.	100,000	400,000	¼	4,000	Jan.	1899	.00½
68	Mayday, g. s	Cal	50,000	50,000	1	10,000	July.	1899	.10
69	Mayflower, g	Cal.	1,200,000	60,000	20	6,000	Sept.	1898	.05
70	Merced, g	Cal.	2,250,000	150,000	15	200,000	July.	1896	2.00
71	Meteor, s. l	Utah.	600,000	300,000	2	9,734	Sept.	1899	.01
72	Mexican, g. s	Nev.	302,400	100,800	3	2,268,800	June.	1899	.10
73	Montreal	Utah.	2,500,000	250,000	10	30,625	April.	1899	.05
74	Mt. Diablo s	Nev.	5,000,000	50,000	100	150,000	Dec.	1898	.10
75	Morning Star, s	Nev.	1,500,000	150,000	10	32,500	Dec.	1898	.00½
76	Nashville, g	Cal	115,000	11,500	10	2,000	Sept.	1898	.17
77	North Banner, g. s	Cal.	1,000,000	100,000	10	21,794	Oct.	1896	.02
78	North Belle Isle, s	Nev.	10,000,000	100,000	100	523,074	July.	1896	.10
79	No. Gould & Curry	Nev.	100,000	100,000	1	375,000	Dec.	1898	.10
80	Northern Light, g	Utah.	2,000,000	400,000	5	80,000	July.	1898	.10
81	Occidental Cons g s	Nev.	300,000	100,000	3	514,179	Sept.	1899	.05
82	Ophir, g. s	Nev.	324,000	108,000	3	4,635,968	Aug.	1899	.15
83	Opohonga	Utah.	200,000	100,000	2	1,500	June.	1898	.01
84	Oro Cache, g. s	S. D.	1,250,000	250,000	5	6,250	July.	1893	.00½
85	Osceola, g	Cal	10,000,000	100,000	100	10,924	Sept.	1898	.01
86	Overman, g. s	Nev.	230,400	115,200	2	4,135,450	Mar.	1899	.05
87	Peer, s	Ariz.	10,000,000	100,000	100	215,000	July.	1894	.05
88	Peerless, s	Nev.	10,000,000	100,000	100	410,000	July.	1894	.05
89	Pine Hill, g	Cal	1,000,000	100,000	10	30,000	July.	1897	.05
90	Potosi, g. s	Nev.	336,000	112,000	3	2,185,200	Sept.	1899	.15
91	Red Mountain, s	Colo.	300,000	60,000	5	22,500	Mar.	1891	.12½
92	Rescue, g	Nev.	100,000	10,000	10	5,500	Feb	1899	.05
93	Reward, g	Cal.	64,000	64,000	1	63,680	Nov.	1898	.02
94	Ridge, c	Mich.	500,000	20,000	25	239,939	Feb.	1897	1.00
95	St. Mary, c	Mich.	1,000,000	40,000	25	4,000	July.	1895	.05
96	Savage, g. s	Nev.	280,000	112,000	2½	7,321,000	Sept.	1899	.10
97	Scorpion, s	Nev.	100,000	100,000	1	445,000	Dec.	1897	.05
98	Seg. Belcher & M g s	Nev.	200,000	100,000	2	373,000	June.	1899	.05
99	Sevier, g. s	Utah.	1,250,000	250,000	5	50,000	April.	1897	.04
100	Shower Con	Utah.	2,000,000	400,000	5	8,000	Aug.	1899	.02
101	Sierra-Nevada, g. s	Nev.	300,000	100,000	3	6,721,910	Aug.	1899	.15
102	Silver Hill, s	Nev.	108,000	108,000	1	2,220,200	May	1898	.05
103	Silver King, s	Ariz.	10,000,000	100,000	100	490,000	Aug.	1899	.25
104	Silver Queen, c	Ariz.	5,000,000	200,000	25	*			
105	Silver State, g	Colo.	700,000	700,000	1	*			
106	Silver State, s. g. l	Utah.	100,000	100,000	1	1,000	Sept.	1897	.00½
107	Siskiyou Con., s	Cal	2,000,000	200,000	10	46,000	April.	1898	.01
108	Snow Flake	Utah.	500,000	100,000	5	51,000	July.	1899	.02
109	South Fork Con	Utah.	50,000	50,000	1	5,000	Mar.	1898	.01
110	South Side	Mich.	1,000,000	40,000	25	4,000	Jan.	1899	.10
111	Star, g. s	Utah.	1,000,000	200,000	5	7,000	Feb.	1899	.03
112	Success	Utah.	30,000	300,000	0.10	6,750	July.	1899	.01
113	Sunbeam Cons	Utah.	250,000	250,000	1	48,125	July.	1899	.06
114	Tecumseh, c	Mich.	1,000,000	40,000	25	40,000	July.	1897	1.00
115	Temonj, g	Colo.	1,000,000	1,000,000	1				
116	Tetro	Utah.	300,000	300,000	1	30,000	Sept.	1899	.01
117	Triumph	Utah.	1,000,000	100,000	10	1,000	April.	1899	.01
118	Union Cons., g. s	Nev.	250,000	100,000	2½	2,648,000	Sept.	1899	.15
119	Utah Cons., s	Nev.	100,000	100,000		485,000	Sept.	1899	.05
120	Valeo	Utah.	200,000	200,000	1	10,000	May.	1899	.05
121	Victory, g. s	S. D.	1,250,000	250,000	5	2,625	Nov.	1899	.00½
122	Watt Blue Gravel, g	Cal.	1,100,000	100,000	10	58,000	May.	1899	.08
123	Work, g	Colo.	1,250,000	1,250,000	1				
124	Yankee Girl	Utah.	250,000	250,000	1	5,000	April.	1899	.02
125	Yellow Jacket, g.s	Nev.	360,000	120,000	3	5,305,000	April.	1899	.15
126	Yellow Jacket	Utah.	300,000	300,000	1	1,500	Dec.	1897	.00½

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. This table is corrected up to August 21. Correspondents are requested to forward changes or additions.

STOCK QUOTATIONS.

LONDON.

Aug. 18.

NAME OF COMPANY.	Country.	Authorised capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers
			£ s. d.	s.d.		£ s. d.	£ s. d.
Alaska Goldfields	Alaska	£300,000	1 0 0	2 1	Mar., 1899	1 1 3	1 3 9
Alaska-Mexican, g	"	200,000	1 0 0	0 4.8	July, 1899	17 6	1 2 6
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	July, "	5 2 6	5 7 6
Anaconda, c., s	Montana	4,000,000	5 0 0	5 1¼	May, 1899	11 10 0	11 12 6
Chiapas, g., s., c	Mexico	252,500	1 0 0	.....	.....	5 0	7 0
Con. Gold Fields, g	"	800,000	1 0 0	.....	.....	15 0	1 0 0
De Lamar, g., s	Idaho	400,000	1 0 0	6	May, 1899	2 6	5 0
Elkhorn Priority (New), s	Colorado	87,500	1 0 0	1 0	June, 1898	1 3	3 9
Golden Gate, g	California	80,000	1 0 0	.....	.....	1 0	2 0
*Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Aug., 1899	1 1 3	1 3 9
Hall Mines, c., s	British Col	250,000	1 0 0	1 0	May, 1898	10 0	12 6
Le Roi, g	"	1,000,000	5 0 0	.....	.....	7 0 0	7 2 6
Lillie, g	Colorado	250,000	1 0 0	2½	Sept., 1899	1 2 6	1 7 6
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	3 5	4 6
Mountain Copper	California	1,250,000	5 0 0	2 6	Sept., 1898	7 17 6	8 2 6
Newfoundland, c	Newfoundland	250,000	1 0 0	.....	.....	12 6	17 6
Palmarejo & Mexican, g., s	Mexico	600,000	1 0 0	.....	.....	2 0	3 0
Pumas-Eureka, g	California	281,250	2 0 0	0 6	Oct., 1896	1 3	2 6
Richmond, g., s., l	Nevada	275,000	5 0 0	1 0	Dec., "	5 0	6 3
Sierra Buttes, g	California	245,000	2 0 0	0 6	Apr., "	6	1 0
Colomb. Hydraulic, g	Colombia	75,000	1 0 0	6	Jan., 1899	5	7 6
Copiapo, c	Chile	200,000	2 0 0	6 0	July, 1899	3 12 6	3 17 6
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	June, 1899	2 2 6	2 5 0
St. John del Rey, g	Brazil	600,000	1 0 0	1 3	June, 1899	1 7 6	1 8 6
Tolima A., s., g	Colombia	70,000	5 0 0	5 0	July, 1897	2 5 0	2 15 0
Tolima B., s., g	"	30,000	5 0 0	5 0	" "	1 0 0	1 10 0
UtahCon., g (HighT'ndBoy)	Utah	300,000	1 0 0	rts.	Mar., 1898	9 0 0	9 15 0
Velvet, g	"	100,000	1 0 0	.....	.....	1 8 9	1 11 3
Ymir, g	"	200,000	1 0 0	.....	.....	1 2 6	1 5 0
British Am. Corp.	"	1,500,000	1 0 0	rts.	Dec., 1898	1 6 0	1 6 6
Linares, l	Spain	45,000	5 0 0	12 6	Mar., 1899	7 10 0	8 10 0
Mason & Barry, c., sul	Portugal	630,000	2 0 0	5 0	May, 1899	3 12 6	3 17 6
Rio Tinto, c	Spain	1,625,000	5 0 0	1 7 6	May, 1899	44 15 0	45 0 0
" pref	"	1,625,000	5 0 0	2 6	May, 1899	6 3 9	6 6 3
Tharsis, c	"	1,250,000	2 0 0	11 0	" 1898	7 15 0	8 5 0
Libiola, c	Italy	252,500	5 0 0	2 6	June, 1899	1 15 0	2 0 0
+Assoc. Gold Mines	W. Australia	500,000	1 0 0	rts.	Aug, 1899	13 12 6	13 15 0
Broken Hill Prop., s	N.S.Wales	384,000	2 8 0	3 0	Aug., 1899	2 5 0	2 6 3
Great Boulder, Prop	W. Australia	1,750,000	1 2 0	1 6	July, 1899	1 16 6	1 17 6
*Hannan's Brownhill, g	"	110,000	1 0 0	7 6	Aug., 1899	14 0 0	14 5 0
Ivanhoe Gold Corp	"	1,000,000	5 0 0	5 0	July, 1899	17 7 6	17 12 6
Kalgurlie, g	"	120,000	1 0 0	rts.	Feb, 1899	3 0 0	13 5 0
*Lake View Consols, g	"	250,000	1 0 0	21	Aug., 1899	26 15 0	27 0 0
Mt. Lyell M. & R., l., c	Tasmania	975,000	9 0 0	3 0	July, 1899	10 15 0	11 0 0
*Mt. Morgan, g	Queensland	1,000,000	1 0 0	7	Aug., 1899	5 5 0	5 12 6
Waihi, g	New Zealand	320,000	1 0 0	2 0	Sept., 1899	7 3 9	7 6 3
West Aust. Jt. Stk. L. & F	W. Australia	1,000,000	1 0 0	1 0	Dec., 1898	7 0	7 1 6
Champion Reef, g	Colar Fields	220,000	10 0 0	3 6	May, 1899	5 5 0	5 7 6
Mysore Gold, g	"	250,000	10 0 0	4 0	July, 1899	9 5 0	9 10 0
Mundydroog, g	"	242,000	1 0 0	2 0	" 1899	2 17 6	3 0 0
*Ooregum, g	"	145,000	1 0 0	6	Aug., 1899	3 13 9	3 16 3
" pref. g	"	120,000	1 0 0	2 6	" 1899	4 10 0	4 12 6
Angelo, g	Transvaal	275,000	1 0 0	5 0	Mar., 1899	7 5 0	7 10 0
Bonanza, g	"	200,000	1 0 0	11 0	June, 1898	4 7 6	4 10 0
British S. Af., chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 2 6	3 3 9
Cape Copper, c	"	600,000	1 0 0	5 0	July, 1899	4 0 0	4 5 0
" pref	"	150,000	2 10 0	5 0	" 1899	4 2 6	4 12 6
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	8 0	Aug , 1899	6 1 3	6 3 9
Con Deep Level, g	"	200,000	1 0 0	x all.	June, 1898	1 10 0	1 15 0
Crown Reef, g	"	120,000	1 0 0	10 0	May, 1899	16 15 0	17 10 0
De Beers Con., d	Cape Colony	8,250,000	5 0 0	21	June, 1899	28 0 0	28 5 0
Durban Roodepoort, g	Transvaal	135,000	1 0 0	5	July, 1899	6 0 0	6 5 0
*Ferreira, g	"	90,000	1 0 0	30 0	Feb., 1899	23 0 0	23 10 0
*Geldenhuis Deep, g	"	350,000	1 0 0	8 0	Aug., 1899	10 2 6	10 7 6
*Geldenhuis Est., g	"	200,000	1 0 0	7 6	" 1899	7 2 6	7 7 6
Ginsberg, g	"	160,000	1 0 0	4 0	Feb., 1899	3 13 9	3 16 3
†Henry Nourse, g	"	125,000	1 0 0	10 0	Aug., 1899	8 2 6	8 7 6
Heriot (New), g	"	115,000	1 0 0	5 0	Aug., 1899	7 0 0	7 5 0
Jagersfontein, d	Orange Fr. St.	1,000,000	5 0 0	9 0	June, 1899	13 17 6	14 2 6
§Johannesburg Con. Invst	So. Africa	2,750,000	1 0 0	2 0	Aug., 1897	1 13 9	1 16 3
Jubilee, g	Transvaal	50,000	1 0 0	5 0	Aug., 1899	6 10 0	6 15 0
*Jumpers, g	"	100,000	1 0 0	5 0	Aug., 1899	5 7 6	5 12 6
Kleinfontein, g	"	275,000	1 0 0	2 0	Mar., 1899	2 15 0	2 17 6
Langlaagte Estate, g	"	500,000	1 0 0	3 0	June, 1899	3 7 6	3 12 6
*May Con., g	"	275,000	1 0 0	6 0	Aug., 1899	5 1 3	5 3 9
Meyer & Charlton, g	"	85,000	1 0 0	8 0	July, 1899	6 0 0	6 5 0
Namaqua, c	Cape Colony	200,000	1 0 0	6 6	June, 1899	4 0 0	4 5 0
§Primrose (New), g	Transvaal	360,000	1 0 0	6 0	Feb., 1899	4 11 3	4 13 9
*Rand Mines, g	So. Africa	400,000	1 0 0	15 0	Aug., 1899	39 15 0	40 0 0
*Robinson, g	Transvaal	2,750,000	5 0 0	8 0	Aug., 1899	9 15 0	10 0 0
Sheba, g	"	1,100,000	1 0 0	0 6	July, 1898	1 1 3	1 3 9
Sim. & Jack Prop., g	"	5,000,000	5 0 0	4 0	July, 1899	6 10 0	6 12 6
Wemmer, g	"	80,000	1 0 0	15 0	June, 1899	13 15 0	14 5 0
Wolhuter, g	"	980,000	4 0 0	2 0	Feb., 1899	4 17 6	5 2 6
§Worcester, g	"	100,000	1 0 0	3 0	July, 1899	3 0 0	3 5 0

§ Dividend pending. * Ex-dividend. † Ex-rights.

MEETINGS.

NAME OF COMPANY.	Location.	Meeting.	Date.	Place of Meeting.
Butte & Boston	Montana.	Annual.	Oct. 2.	Butte, Mont.
Camp Floyd	Utah	"	Sept. 4.	417 McCornick Bldg., Salt Lake City, Utah.
Chrysolite	Colorado.	"	Nov. 8.	80 Broadway, New York City.
Con. Cal & Va.	Nevada.	"	Oct. 21.	San Francisco, Cal.
Con. G. Gate & Sulph	California	"	Sept. 12.	San Francisco, Cal
Edwin Booth	Colorado.	"	Sept. 30.	142 Curtis st., Denver, Colo.
Fortune	Colorado.	"	Sept. 12.	16th & Blake sts., Denver, Colo.
Great Western, q.	California	"	Nov. 6.	530 California st., San Francisco, Cal.
Horn Silver	Utah	"	Oct. 5.	Salt Lake City, Utah.
Kellogg Creek	California	Special.	Sept. 11.	328 Montgomery st., San Francisco. Cal.
Nettie Dutcher	Colorado	"	Sept. 19.	Denver, Colo.
Siskiyou Con.	California	Annual.	Nov. 4.	306 Pine st., San Francisco, Cal.
Quincy	California	"	Sept. 7.	459 California st., San Fancisco, Cal.

ASSESSMENTS.

NAME OF COMPANY.	Location.	$	Dlq.	Sale.	Amt.	OFFICE.
			Aug.			
Alpha Con	Nev..	22	16	Sept. 7	.03	309 Montgomery st., San Francisco.
Belcher	Nev..	61	16	Sept. 6	.10	Mills Bldg., San Francisco, Cal.
Cedar Valley	Utah	1	22	Sept. 8	.00½	Atlas Block, Salt Lake City.
Challenge Con	Nev..	27	22	Sept. 12	.10	Mills Bldg., San Francisco, Cal.
Chollar	Nev..	49	24	Sept. 14	.15	Mills Bldg., San Francisco, Cal.
Ely	Utah	2	22	Sept. 11	.01	150 Main st., Salt Lake City.
Geyser	Colo.	..	24	Sept. 25	.10	31 Milk st., Boston, Mass.
Homestake	Utah	..	30	Sept. 18	.00½	163 South Main st., Salt Lake City.
Marguerite	Cal.	14	28	Sept. 25	.10	237 12th st., San Francisco.
R. G. W	Utah	2	17	Nov. 4	.01	34 W. 2d South st., Salt Lake City.
Sailor Con	Cal..	1	21	Sept. 18	.14	318 Front st., San Francisco.
Sierra Nevada	Nev..	116	18	Sept. 7	.15	309 Montgomery st., San Francisco.
South Bingham	Utah	..	7	Sept. 20	.00¼	46½ W. 2d South st., Salt Lake City.
			Sept.			
Acorn	Utah	1	23	Oct. 14	.00½	Wells, Fargo Bank, Salt Lake City.
Alaska	Utah	..	15	Oct. 14	.01½	714 McCornick Bldg., Salt Lake City
Alexandria	S. D.	..	18	Oct. 6	.005	H. H. Armstrong, Jr. Galena, S. D.
Central Eureka	Cal..	13	1	Sept. 25	.03	320 Sansome st., San Francisco, Cal.
Con. St. Gothard	Cal..	..	12	.....	.05	.....
Eureka Con. D	Cal..	20	12	Sept. 30	.00½	1,209 Claus Spreckels Bldg., S. Fra'co
Excelsior	Cal..	..	11	.....	.05	.....
Ford	Cal..	..	11	.....	.01	.....
Galena Treasure	S. D.	..	18	Oct. 6	.002	H. H. Armstrong, Jr., Galena, S. D.
Humboldt	Cal..	..	11	.....	.02	.....
International	Utah	..	5	Sept. 25	.01	117 S. W. Temple st., Salt Lake City.
La Suerte	Cal..	..	8	.....	.22	.....
Little Chief	Utah	1	9	Sept. 26	.01	161 South Main st., Salt Lake City.
Live Yankee	Cal..	..	9	.....	.01	Grainteville, Cal.
Madge	S. D.	..	18	Oct. 6	.002	H. H. Armstrong, Jr., Galena, S. D.
Maripsa C'l & Mg	Cal	12	5	Sept. 29	10.00	320 Sansome st., San Francisco.
Meteor	Utah	..	5	Oct. 10	.00½	304 Dooly Bldg., Salt Lake City.
National Con	Cal..	8	18	Oct. 11	.10	773 Mission st., San Francisco.
New Klondike	Utah	..	12	Sept. 28	.00½	310 McCornick Block, Salt Lake City
Occidental Con	Nev..	33	5	Sept. 28	.05	309 Montgomery st., San Francisco.
Old Home	Cal..	..	11	.....	.01	.....
Orleans	Cal..	9	8	Oct. 3	.05	324 Pine st., San Francisco.
Overman	Nev..	3	22	Oct. 13	.05	414 California st., San Francisco.
Potosi	Nev..	53	14	Oct. 5	.15	309 Montgomery st., San Francisco.
Powning	Cal..	..	12	.....	.00½	.....
Savage	Nev..	98	6	Sept. 26	.10	309 Montgomery st., San Francisco.
Tetro	Utah	9	16	Oct. 7	.01	617 McCornick Block, Salt Lake City
Union Con	Nev..	58	6	Sept. 25	.15	309 Montgomery st., San Francisco.
Utah Con	Nev..	31	7	Sept. 28	.05	309 Montgomery st., San Francisco.
Willow Creek	S. D.	..	7	Sept. 22	.01	Le Mars, Iowa.

DIVIDENDS.

NAME OF Co.	Date.	Am't.	Paid 1899.	Grand Total.
Alamo, Utah	.....	.....	$2,500	$2,500
Alaska-Mexican	.....	.....	54,000	411,031
Alaska-Treadwell	.....	.....	225,000	4,145,000
Ætna Con	.....	.....	30,000	180,000
American Coal	Sept.1	$75,000	150,000	727,500
American Gold	.....	.....	48,000	434,000
Am. Zinc-L. & Sm.	.....	.....	20,000	20,000
Anaconda Copper	.....	.....	1,500,000	9,750,000
Anchoria-Leland	.....	.....	54,000	216,000
Apollo Con., Alas	.....	.....	40,000	140,000
April Fool, Nev	.....	.....	6,000	6,000
Argonaut, Cal	.....	.....	160,000	340,000
Associated, Colo	.....	.....	12,000	84,000
Aurora Iron	.....	.....	50,000	800,000
Bald, Butte	.....	.....	75,000	724,648
Bonanza, Wash	.....	.....	2,500	2,500
Bona'za Dev., N.M	.....	.....	1,050,000	1,500,000
Boston-Aurora	.....	.....	10,656	10,656
Boston-Duenweg, z	.....	.....	16,000	16,000
Boston-LittleC. Zn	Sept.1	10,000	40,000	40,000
Boston Provid'nce	Sept.4	750	9,000	9,000
Boston & Cal	.....	.....	72,000	72,000
Boston & Mont	.....	.....	3,150,000	12,275,000
Breece	Sept.1	10,000	30,000	60,000
Bul. Bec. & Champ	.....	.....	80,000	2,398,400
Bunker Hill & S	.....	.....	105,000	705,000
Calumet & Hecla	.....	.....	6,000,000	62,850,000
Cariboo-M'Kinney	.....	.....	75,000	311,965
Centenn'l Eureka	.....	.....	120,000	2,150,000
Central Lead	.....	.....	40,000	122,000
Charleston, S. C	.....	.....	20,000	200,000
Colorado Sm	.....	.....	100,000	1,945,000
Colonial Lead, Mo	.....	.....	10,000	10,000
Consolidation Coal	.....	.....	205,000	5,716,650
D'rTr'l No. 2, Wash	.....	.....	20,000	37,500
Doe Run, Mo	.....	.....	20,000	80,000
De Lamar, Idaho	.....	.....	48,000	2,346,000
El Dorado, Cal	.....	.....	10,000	10,000
Empire State, Ida	Sep.15	24,628	167,473	229,375
Fanny Rawlings	.....	.....	20,000	20,000
Ferris-H'g'ty, Wyo	.....	.....	5,000	5,000
Garfield Con	.....	.....	12,000	34,000
Gold Coin, Vict	.....	.....	80,000	230,000
Golden Cycle	.....	.....	.....	.....
Golden Eagle, Col	.....	.....	.....	.....
Gold King, Col	.....	.....	.....	.....
Golden M. & Ex	.....	.....	.....	.....
Golden Star, Ont	.....	.....	.....	.....
Grand Central, Ut	Sept.1	$60,000	347,500	666,250
Grass Valley Ex	.....	.....	22,500	22,500
Gwin, Cal	Sept.8	5,000	35,000	86,500
Helena & Frisco	.....	.....	125,000	550,000
Hidden Treas., Cal	.....	.....	3,600	3,600
High Five, Colo	.....	.....	10,000	10,000
Holy Terror	.....	.....	25,000	142,000
Homestake	.....	.....	542,500	7,723,750
Horn Silver	.....	.....	40,000	5,270,000
Idaho B. C	.....	.....	28,000	292,000
Isabella	.....	.....	180,000	450,000
Jack Pot	.....	.....	25,000	25,000
Jamison, Cal	.....	.....	11,700	50,700
Ky. J., C. & Mfg	.....	.....	10,980	164,041
Lake Superior Ir	.....	.....	84,000	227,860
Last Chance, B. C	.....	.....	25,000	45,000
Lillie	Sept.1	11,250	101,250	267,860
Mammoth	.....	.....	120,000	1,470,030
Marion Con., Colo	.....	.....	5,000	300,000
Mead, Cal	.....	.....	40,000	120,000
Mercur	.....	.....	50,000	1,291,000
Mo. Zinc Fields, pfd	.....	.....	7,962	7,962
Modoc	Sept15	10,000	90,000	170,000
Montoc., Ltd	.....	.....	98,855	453,700
Mont. Ore Pur	Sept27	80,000	480,000	1,280,000
Morning Star, Cal	.....	.....	49,200	737,400
Moulton, Mont	.....	.....	20,000	480,000
Mt. Shasta, Cal	.....	.....	6,000	6,000
Napa Con	.....	.....	60,000	1,010,000
New Central Coal	.....	.....	20,000	470,000
New Idria	.....	.....	60,000	140,000
N.Y. & H.-Rosario	.....	.....	105,000	1,095,000
North Star, Cal	.....	.....	50,000	550,000
Olive	.....	.....	12,000	12,000
Orig. Empire, Cal	.....	.....	50,000	500,000
Osceola	.....	.....	279,000	2,801,500
Parrot	.....	.....	552,000	2,690,898
Pennsylvania Cal	.....	.....	36,050	95,275
PennsylvaniaCoal	.....	.....	$800,000	$14,050,000
Petro, Utah	.....	.....	5,000	22,500
Pioneer, Cal	.....	.....	12,500	62,500
Portland	.....	.....	480,000	2,317,080
Queen Bess, B. Col	.....	.....	12,150	12,150
Quicksilver (Pref.)	.....	.....	21,500	1,845,411
Quincy	.....	.....	950,000	11,070,000
Rambler Cariboo	.....	.....	10,000	50,000
Raven, Colo	Sep 20	$10,000	10,000	29,500
Republic, Wash	Sept15	31,500	157,500	3?3,000
Royal, B. C	.....	.....	50,000	1,050,000
Sacramento	Sept.1	5,000	45,000	133,000
St. Joseph Lead	.....	.....	75,000	2,359,500
Silver King	.....	.....	375,000	2,200,000
Small Hopes	.....	.....	25,000	3,325,000
Smuggler	.....	.....	80,000	1,175,000
South Swansea	.....	.....	30,000	142,500
Standard, Cal	.....	.....	40,000	3,879,226
Standard, Ida	.....	.....	30,000	1,745,000
Swansea	.....	.....	40,000	231,000
Tamarack	.....	.....	240,000	5,910,000
Tomboy	.....	.....	80,000	730,000
United Z. & L., pfd	.....	.....	20,000	20,000
Utah, Utah	.....	.....	2,000	179,000
Vindicator	.....	.....	126,875	253,750
War Eagle, B. C	Sept15	26,250	236,250	414,000
Weatherly Bonanza, Wash	.....	.....	1,562	1,562
Wolverine	Oct. 2	120,000	210,000	270,000
Yellow Aster	.....	.....	65,000	233,789
Grand Total	.....	.....	$479,378	$20,995,088	197,018,131

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Ætna Cons., q	Cal	$500,000	100,000	$5	*				$180,000	July	1899	.10
2	Alaska-Mexican, g	Alask	1,000,000	200,000	5					411,081	July	1899	.10
3	Alaska-Treadwell, g	Alask	5,000,000	200,000	25	*				4,145,000	July	1899	.37½
4	Alamo, g. c. i	Utah	125,000	125,000	1	$937	Mar.	1898	.00¼	2,500	April	1899	.02
5	Alice, g. s	Mont.	10,000,000	400,000	25	*				1,075,000	April	1898	.05
6	American Coal	Md	1,500,000	60,000	25					727,500	Sept.	1899	1.25
7	American Gold, g. s. c. l	Colo.	3,000,000	300,000	10	*				434,000	June	1899	.09
8	Am. Zinc, Lead & Sm	Mo	500,000	200,000	25					20,000	July	1899	.10
9	Anaconda Copper	Mont.	30,000,000	1,300,000	25					9,750,000	May	1899	1.25
10	Anchoria-Leland, g	Colo.	600,000	600,000	1	*				198,000	April	1899	.03
11	Appie Ellen, g	Colo.	600,000	600,000	1					25,000	Aug.	1898	.01
12	April Fool	Nev.	500,000	500,000	1					6,000	Aug.	1899	.01
13	Argonaut	Cal	2,000,000	200,000	10					340,000	Aug.	1899	.10
14	Associated, g	Colo.	1,250,000	1,250,000	1	*				84,000	Feb.	1899	.01
15	Atlantic, c	Mich.	1,000,000	40,000	25					780,000	Feb.	1898	1.00
16	Aurora, i	Mich.	2,500,000	100,000	25	*				890,000	June	1899	.50
17	Bald Butte	Mont.	250,000	250,000	1	*				724,648	July	1899	.06
18	Big Six, g. s	Colo.	500,000	500,000	1					15,000	May	1898	.00½
19	Bonanza, Dev	NMex	3,000,000	300,000	10					1,500,000	June	1899	3.50
20	Boston-Aurora, pref	Mo	800,000	32,000	25					10,656	Aug.	1899	.17
21	Boston & California	Cal	600,000	600,000	1					72,000	June	1899	.06
22	Boston-Little Circle, z	Mo-K	1,000,000	100,000	10	*				30,000	Aug.	1899	.10
23	Boston & Mont. Con	Mont.	3,750,000	150,000	25	*				12,275,000	Aug.	1899	10.00
24	Breece, i	Colo.	5,000,000	200,000	25					60,000	Sept.	1898	.05
25	Bullion-Beck & Champ	Utah.	1,000,000	100,000	10	*				2,398,400	Aug.	1899	.10
26	Bunker Hill & S., s. l	Idaho	3,000,000	300,000	10					705,000	May	1899	.07
27	Calumet & Hecla, c	Mich.	2,500,000	100,000	25					62,850,000	June	1899	20.00
28	Centen'l-Eureka, g.s.l.c	Utah.	1,500,000	30,000	50	30,000	Mar.	1889	1.00	2,150,000	Aug.	1899	.50
29	Central Lead, l	Mo	1,000,000	10,000	100	*				122,000	Aug.	1899	.50
30	Champion, g. s	Cal	340,000	34,000	10					296,200	April	1898	.25
31	Charleston, p. r	S. C.	1,000,000	10,000	100	*				200,000	June	1899	2.00
32	Consolidation Coal	Md	10,250,000	102,500	100					5,716,650	Feb.	1899	2.00
33	Con. Tiger & Poorman	Idaho	1,000,000	1,000,000	1	*				20,000	Dec.	1898	.02
34	Crœsus, g	Cal	1,000,000	200,000	5	*				30,000	Dec.	1898	.15
35	Crowned King, g. s. l	Ariz	6,000,000	600,000	10	*				232,000	Dec.	1898	.02
36	Deadwood-Terra, g	S. D.	5,000,000	200,000	25	*				1,350,000	May	1898	.15
37	De Lamar, g. s	Idaho	2,000,000	400,000	5					2,346,000	May	1899	.12
38	Deer Trail No. 2	Wash	1,000,000	1,000,000	1					37,500	Aug.	1899	.00¼
39	Doe Run, l	Mo	500,000	5,000	100					80,000	Aug.	1899	.50
40	Elkton Cons., g	Colo.	1,250,000	1,250,000	1					656,961	Nov.	1898	.01½
41	El Paso, g. s	Colo.	650,000	650,000	1					12,393	Jan.	1898	.01
42	Empire State-Idaho	Idaho	1,000,000	100,000	10					204,747	Aug.	1899	.20
43	Enterprise, s. l	Colo.	500,000	500,000	1					900,000	Sept.	1898	.05
44	Fanny Rawlings, g. s	Colo.	1,000,000	1,000,000	1					20,000	Aug.	1899	.01
45	Ferris-Haggarty, c.g.s.	Wyo.	1,000,000	1,000,000	1					5,000	Mar.	1899	.00½
46	Garfield Con., g	Colo.	1,200,000	1,200,000	1					34,000	May	1899	.01
47	Geyser-Marion, g	Utah.	1,500,000	300,000	5					96,000	Sept.	1898	.02
48	Gold Coin of Victor, g	Colo.	1,000,000	1,000,000	1					230,000	Aug.	1899	.01
49	Golden Cycle, g	Colo.	1,000,000	200,000	5					218,500	Aug.	1899	.05
50	Gold King, g	Colo.	1,000,000	1,000,000	1					60,000	July	1899	.03
51	Goldea Eagle, g	Colo.	500,000	500,000	1					5,000	July	1899	.01
52	Golden Reward, g	S. D.	1,000,000	100,000	10					155,000	Feb	1898	.15
53	Golden Star	Ont.	100,000	100,000	1					41,000	July	1899	.01
54	Grand Central, g	Utah.	250,000	250,000	1					606,250	Aug.	1899	.15
55	Grass Valley Expl	Cal	100,000	30,000	2	*				22,500	July	1899	.25
56	Gwin, g	Cal	1,000,000	20,000	50	286,000	Jan.	1898		81,500	Aug.	1899	.25
57	Helena & Frisco, l. s	Idaho	2,500,000	500,000	5	*				550,000	June	1899	.25
58	Holy Terror, g	S. D.	500,000	500,000	1					142,000	July	1899	.01
59	Homestake, g	S. D.	21,000,000	210,000	100	200,000	July	1878	1.00	7,723,750	Aug.	1899	.50
60	Hope of St. Louis, s	Mont.	1,000,000	100,000	10	*				762,252	Mar.	1898	.10
61	Horn-Silver, g. s. c.sp.l	Utah.	10,000,000	400,000	25	*				5,279,000	July	1899	.05
62	Iowa, g	Colo.	1,000,000	1,000,000	1					95,000	June	1898	.00½
63	Iron Mountain, g. s. l. i	Mont.	5,000,000	500,000	10	*				507,500	April	1898	.02
64	Isabella, g	Colo.	2,250,000	2,250,000	1					448,500	June	1899	.02
65	Jack Pot, g	Colo.	1,250,000	1,250,000	1					25,000	Mar.	1899	.02½
66	Jamison	Cal	3,900,000	390,000	10	144,000	Nov.	1896	.17	50,700	April	1899	.10
67	Jersey Leasing	Colo.	200,000	158,167	1					137,875	Oct	1898	.03½
68	Lake Superior Iron	Mich.	2,100,000	84,000	25					736,000	Feb	1899	1.00
69	Lillie, g	Colo.	1,250,000	250,000	5					256,610	Aug.	1899	.05
70	Mammoth, g. s. c	Utah.	10,000,000	400,000	25	*				1,470,000	Aug.	1899	.10
71	Matoa, g	Colo.	1,000,000	1,000,000	1					25,000	Dec.	1898	.02½
72	Mead, g	Cal	200,000	200,000	1					120,000	June	1899	.20
73	Mercur, g	Utah.	5,000,000	200,000	25	*				1,291,000	July	1899	12½
74	Minnesota Iron	Minn.	16,500,000	165,000	100	*				4,735,000	Oct	1898	1.50
75	Missouri Zinc Fields. pf	Mo	400,000	16,000	25					7,932	Aug.	1899	.17
76	Modoc, g	Colo.	500,000	500,000	1					160,000	Aug.	1899	.03
77	Montana, Ltd., g. s	Mont.	3,300,000	657,128	5	*				453,000	April	1899	.12
78	Montana Ore Purchas'g	Mont.	2,500,000	80,000	25	*				1,200,000	July	1899	1.00
79	Moon-Anchor Con., g	Colo.	1,750,000	600,000	1					261,000	Nov.	1898	.07½
80	Morning Star, g	Cal	240,000	2,400	100	70,800	Feb.	1887	.75	737,400	Aug.	1899	2.00
81	Monument	Colo.	300,000	300,000	1					12,624	Dec.	1898	.01
82	Mt. Rosa, g	Colo.	1,000,000	1,000,000	1					60,000	Jan.	1898	.02
83	Mt. Shasta	Cal	100,000	20,000	5					6,000	May	1899	.30
84	Moulton	Mont.	2,000,000	400,000	5					480,00	Feb	1899	.05
85	Mountain Copper	Cal	6,250,000	250,000	25					93,750	Sept.	1898	.62½
86	Napa Cons., q	Cal	700,000	100,000	7	*				1,010,000	July	1899	.20
87	New Central Coal	Md	1,000,000	50,000	20					470,000	April	1899	.40
88	New Idria, q	Cal	500,000	100,000	5					140,000	July	1899	.20
89	N.Y.&Hon Rosario, s.g	C. A.	1,500,000	150,000	10	*				1,095,000	Aug.	1899	.10
90	North Star, g	Cal	5,000,000	500,000	10	20,000	June	1885	.02	550,000	April	1899	.25
91	Nugget	Colo.	1,000,000	1,000,000	1					20,000	Aug.	1898	.00½
92	Orphan Bell, g	Colo.	1,000,000	1,000,000	1					115,000	Mar.	1898	.01
93	Original Empire, g	Cal	5,000,000	50,000	100	92,500	Aug.	1896	1.25	500,000	May	1899	1.00
94	Osceola, c	Mich.	2,500,000	98,000	25	*				2,801,500	June	1899	3.00
95	Parrot, c	Mont.	2,300,000	230,000	10	*				2,690,898	May	1899	1.50
96	Pennsylvania Coal	Pa	5,000,000	100,000	50					14,050,000	May	1899	8.00
97	Pennsylvania Cons	Cal	5,150,000	51,500	100	50,051	Feb.	1892	.05	95,275	Aug.	1899	.20
98	Petro, g	Utah.	1,000,000	200,000	5					5,000	July	1899	.02½
99	Pioneer g	Cal	1,000,000	100,000	10					62,500	Mar.	1899	12½
100	Portland, g	Colo.	3,000,000	3,000,000	1	*				2,317,080	Aug.	1899	.02
101	Quicksilver, pref	Cal	4,300,000	43,000	100					1,845,411	May	1899	.50
102	Quicksilver, com	Cal	5,700,000	57,000	100					643,867	July	1882	.40
103	Quincy, c	Mich.	2,500,000	100,000	25	*				11,070,000	Aug.	1899	6.00
104	Raven, g	Colo.	1,500,000	1,500,000	1					19,500	Mar.	1898	.01
105	Republic Cons., g	Wash	3,500,000	3,150,000	1					291,500	Aug.	1899	.01
106	Royal Con., g	B. C.	2,500,000	2,500,000	1					1,050,000	June	1899	.01
107	Sacramento, g	Utah.	5,000,000	1,000,000	5					128,000	Aug.	1899	.00½
108	St. Joseph, l	Mo	3,000,000	300,000	10	*				2,859,500	June	1899	.50
109	Santa Rosalia, g.s	Cal	100,000	100,000	1					125,000	Feb	1898	1.10
110	Silver King, g. s. l	Utah.	3,000,000	150,000	20	3,000	Jan.	1897	.02	2,200,000	Aug.	1899	.25
111	Small Hopes, s	Colo.	5,000,000	250,000	20	*				3,325,000	Feb	1899	.10
112	Smuggler, s. l. z	Colo.	1,000,000	1,000,000	1					1,175,000	Aug.	1899	.01
113	South Swansea, s. l	Utah.	150,000	150,000	1					142,500	Aug.	1899	.05
114	Standard Cons., g. s	Cal	2,000,000	200,000	10	99,888	June	1890	.50	3,873,226	Aug.	1899	.10
115	Standard	Idaho	500,000	500,000	1					1,745,000	April	1899	.06
116	Swansea, s. l	Utah.	500,000	100,000	5					231,000	Aug.	1899	.05
117	Tamarack, c	Mich.	1,500,000	60,000	25					5,910,000	June	1899	4.00
118	Tomboy, g	Colo.	2,000,000	200,000	10					730,000	May	1899	4.00
119	United, z. l., pref	Mo	1,000,000	40,000	25	*				20,000	July	1899	.50
120	Utah	Utah.	1,000,000	100,000	10	*				179,000	Jan.	1899	.02
121	Victor, g	Colo.	1,000,000	200,000	5	*				1,155,000	Dec.	1898	.50
122	Vindicator, Cons. g	Colo.	1,500,000	1,015,000	1					253,750	July	1899	.05
123	War Eagle, Cons.	B. C.	2,000,000	1,750,000	1					387,750	Aug.	1899	.01½
124	Wolverine, c	Mich.	1,500,000	60,000	25	180,000	Mar.	1895	1.00	270,000	Oct	1899	1.50
125	Yellow Aster, g	Cal	1,000,000	100,000	10	*				238,789	July	1899	.10

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.		
1	Ada Cons., s. l	Utah.	$100,000	100,000	$1	$3,333	Nov.	1895	.01½
2	Alliance, g. s. l	Utah.	150,000	150,000	1	200,000	Dec.	1895	.10
3	Allouez, c	Mich.	2,500,000	100,000	25	1,520,937	June.	1894	1.00
4	Alpha Cons., g. s	Nev.	105,000	105,000	1	319,200	Aug.	1899	.03
5	Alta, s	Nev.	216,000	108,000	2	3,675,710	June.	1899	.05
6	Alta	Utah.	750,000	750,000	1	938	Mar.	1899	.00½
7	American Quartz, g	Cal.	1,000,000	100,000	10	1,000	Feb.	1897	.01
8	Anchor, g. s. l	Utah.	1,500,000	150,000	10	560,000	Aug.	1893	.20
9	Andes, g	Nev.	300,000	100,000	3	1,305,000	June.	1899	.05
10	Arnold, c	Mich.	1,500,000	60,000	25	180,000	Jan.	1899	3.00
11	Baliol, g	Cal.	1,000,000	100,000	10	55,000	Mar.	1898	.30
12	Belcher, s. g	Nev.	312,000	104,000	3	3,535,600	Mar.	1899	.10
13	Belle Isle	Nev.	10,000,000	100,000	100	240,271	July	1896	.10
14	Benton Con. s	Nev.	10,800,000	108,000	100	587,023	June	1897	.25
15	Best & Belcher, g. s	Nev.	302,400	100,800	3	2,609,803	Aug.	1899	.10
16	Bogan	Utah.	1,250,000	125,000	10	26,875	Dec.	1897	.01½
17	Boston & Cp. Ck., g	Colo.	400,000	200,000	2	20,000	Aug.	1898	.10
18	Brunswick Cons., g	Cal.	500,000	500,000	1	160,000	July	1897	.03
19	Bullion, s. g	Nev.	100,000	100,000	1	3,125,000	May	1899	.05
20	Caledonia	Nev.	300,000	200,000	3	3,210,000	Nov.	1897	.10
21	Centennial, c	Mich.	2,500,000	100,000	25	460,000	Mar.	1898	3.00
22	Central Eureka, g	Cal.	4,000,000	400,000	10	135,942	Sept.	1899	.03
23	Challenge Cons, s.g	Nev.	150,000	50,000	3	438,000	Aug.	1899	.10
24	Chollar, g. s	Nev.	336,000	112,000	3	2,076,600	Aug.	1899	.15
25	Confidence, g. s	Nev.	74,880	24,960	3	545,118	May	1899	.20
26	Con., Cal. & Va	Nev.	540,000	216,000	2½	734,000	May	1899	.25
27	Cons. Imperial, g. s	Nev.	500,000	500,000	1	2,251,000	July	1899	.01
28	Con. New York	Nev.	100,000	100,000	1	160,500	Nov.	1898	.03
29	Crown Point, g. s	Nev.	300,000	100,000	3	2,980,000	May	1899	.10
30	Dalton, s. l	Utah.	2,500,000	500,000	5	58,750	April	1899	.01
31	Dexter	Nev.	1,000,000	200,000	5	38,000	Apr.	1898	.15
32	Diamond Con	Utah.	1,000,000	200,000	5	8,000	Mar.	1899	.04
33	Eagle, g. s	Cal.	500,000	100,000	5	5,000	Dec.	1896	.05
34	Eagle, g. s	Utah.	1,000,000	100,000	10	6,000	Oct.	1898	.01½
35	Emerald	Utah.	300,000	300,000	1	3,000	Oct.	1898	.00½
36	Eureka Cons., g. s. l	Nev.	1,000,000	50,000	20	585,000	Sept.	1898	.20
37	Eureka Con. Drift, g.	Cal.	500,000	500,000	1	182,500	Sept.	1899	.00½
38	Exchequer, g. s	Nev.	1,000,000	100,000	1	1,020,000	Dec.	1897	.05
39	Florence	Utah.	1,000,000	200,000	5	1,000	June.	1899	.00¼
40	Four Aces	Utah.	250,000	250,000	1	5,000	Mar.	1898	.01
41	Galena	Utah.	1,000,000	100,000	10	10,000	Oct.	1898	.10
42	Geyser, s. l	Colo.	5,000,000	500,000	10	1,225,000	July	1899	.10
43	Gold Belt, g. s	Utah.	500,000	500,000	1	3,012	July	1896	.00½
44	Gold Coin	Colo.	1,000,000	200,000	.5	10,000	Mar.	1899	.05
45	Golden Eagle, g	Nev.	400,000	400,000	1	4,000	April.	1899	.01
46	Golden Fleece Grav. g	Cal.	130,000	130	1000	56,260	Mar.	1897	2.00
47	Gold & Silver Carb	Utah.	500,000	500,000	1	2,500	Mar.	1899	.00½
48	Gould & Curry	Nev.	324,000	108,000	5	4,625,150	July	1899	.10
49	Granite Hill, g. s	Cal.	500,000	100,000	5	124,000	June.	1899	.03
50	Great Eastern, g	Utah.	1,500,000	300,000	5	6,500	July	1899	.00½
51	Great Western, q	Cal.	5,000,000	50,000	100	75,520	May.	1899	.15
52	Hale & Norcross, g.s.	Nev.	11,200,000	112,000	100	5,716,280	May.	1899	.10
53	Head Center Con., s.g	Ariz.	5,000,000	200,000	25	25,125	Mar.	1899	.20
54	Horse Shoe Bar Cons	Utah.	6,000,000	60,000	100	85,800	Jan.	1899	.05
55	Joe Bowers, Ext. g	Utah.	112,000	450,000	¼	9,000	July	1899	.01
56	Julia Con	Nev.	110,000	110,000	1	1,498,800	Jan.	1899	.03
57	Jupiter, g	Cal.	2,000,000	20,000	100	80,000	Feb.	1898	.20
58	Justice, g. s. c	Nev.	210,000	105,000	2	3,662,500	Aug.	1899	.10
59	Kentuck	Utah.	600,000	300,000	2	30,000	Aug.	1898	.10
60	Kentuck Cons., s	Nev.	105,000	105,000	1	125,300	June.	1898	.05
61	Lacrosse, g	Colo.	1,000,000	100,000	10	*			
62	Little Pittsburg	Utah.	2,000,000	400,000	5	21,000	June.	1899	.00¼
63	Lower Mammoth	Utah.	150,000	150,000	1	22,500	June.	1899	.05
64	Lucky Bill	Utah.	300,000	120,000	2.50	56,400	June.	1898	.01½
65	Marguerite, g	Cal.	500,000	50,000	10	85,000	Aug.	1899	.10
66	Marina Marsicano, g	Cal.	1,000,000	100,000	10	49,360	June.	1899	.05
67	May Day	Utah.	100,000	400,000	¼	4,000	Jan.	1899	.00½
68	Mayday, g. s	Cal	50,000	50,000	1	10,000	July	1899	.10
69	Mayflower, g	Cal.	1,200,000	60,000	20	6,000	Sept.	1898	.05
70	Merced, g.	Cal.	2,250,000	150,000	15	200,000	July	1896	2.00
71	Meteor, s. l	Utah.	600,000	300,000	2	9,734	Sept.	1899	.01
72	Mexican, g. s	Nev.	302,400	100,800	3	2,268,800	June.	1899	.10
73	Montreal	Utah.	2,500,000	250,000	10	30,625	April.	1899	.05
74	Mt. Diablo s	Nev.	5,000,000	50,000	100	150,000	Dec.	1898	.10
75	Morning Star, s	Nev.	1,500,000	150,000	10	32,500	Dec.	1898	.00½
76	Nashville, g	Cal.	115,000	11,500	10	2,000	Sept.	1898	.17
77	North Banner, g. s	Cal.	1,000,000	100,000	10	21,794	Oct.	1896	.02
78	North Belle Isle, s	Nev.	10,000,000	100,000	100	523,074	July	1896	.10
79	No. Gould & Curry	Nev.	100,000	100,000	1	375,000	Dec.	1898	.10
80	Northern Light, g	Utah.	2,000,000	400,000	5	80,000	July	1898	.10
81	Occidental Cons g s	Nev.	300,000	100,000	3	514,179	Sept.	1899	.05
82	Ophir, g. s	Nev.	324,000	108,000	3	4,635,968	Aug.	1899	.15
83	Opohonga	Utah.	200,000	100,000	2	1,500	June.	1898	.01
84	Oro Cache, g. s	S. D.	1,250,000	250,000	5	6,250	July	1893	.00½
85	Osceola, g	Cal	10,000,000	100,000	100	10,924	Sept.	1898	.01
86	Overman, g. s	Nev.	230,400	115,200	2	4,135,459	Mar.	1899	.05
87	Peer, s	Ariz.	10,000,000	100,000	100	215,000	July	1894	.05
88	Peerless, s	Nev.	10,000,000	100,000	100	410,000	July	1894	.05
89	Pine Hill, g	Cal	1,000,000	100,000	10	30,000	July	1897	.05
90	Potosi, g. s	Nev.	336,000	112,000	3	2,185,200	Sept.	1899	.15
91	Red Mountain, s	Colo.	300,000	60,000	5	22,500	Mar.	1891	12½
92	Rescue, g	Nev.	100,000	10,000	10	5,500	Feb.	1899	.05
93	Reward, g	Cal.	64,000	64,000	1	63,680	Nov.	1898	.02
94	Ridge, c	Mich.	500,000	20,000	25	239,939	Feb.	1897	1.00
95	St. Mary, c	Mich.	1,000,000	40,000	25	4,000	July.	1895	.05
96	Savage, g. s	Nev.	280,000	112,000	2½	7,321,000	Sept.	1899	.10
97	Scorpion, s	Nev.	100,000	100,000	1	445,000	Dec.	1897	.05
98	Seg. Belcher & Mgs	Nev.	200,000	100,000	2	373,000	June.	1899	.05
99	Sevier, g. s	Utah.	1,250,000	250,000	5	50,000	April.	1897	.04
100	Shower Con	Utah.	2,000,000	400,000	5	8,000	Aug.	1899	.02
101	Sierra-Nevada, g. s	Nev.	300,000	100,000	3	6,721,910	Aug.	1899	.15
102	Silver Hill, s	Nev.	108,000	108,000	1	2,220,200	May	1898	.05
103	Silver King, s	Ariz.	10,000,000	100,000	100	490,000	Aug.	1899	.25
104	Silver Queen, c	Ariz.	5,000,000	200,000	25	*			
105	Silver State, g	Colo.	700,000	700,000	1	*			
106	Silver State, s. g. l	Utah.	100,000	100,000	1	1,000	Sept.	1897	.00½
107	Siskiyou Con., s	Cal	2,000,000	200,000	10	46,000	April.	1898	.01
108	Snow Flake	Utah.	500,000	100,000	5	51,000	July	1899	.02
109	South Fork Con	Utah.	50,000	50,000	1	5,000	Mar.	1898	.01
110	South Side	Mich.	1,000,000	40,000	25	4,000	Jan.	1899	.10
111	Star, g. s	Utah.	1,000,000	200,000	5	7,000	Feb.	1899	.03
112	Success	Utah.	30,000	300,000	0.10	6,750	July.	1899	.01
113	Sunbeam Cons	Utah.	250,000	250,000	1	48,125	July.	1899	.06
114	Tecumseh, c	Mich.	1,000,000	40,000	25	40,000	July.	1897	1.00
115	Temonj, g	Colo.	1,000,000	1,000,000	1				
116	Tetro	Utah.	300,000	300,000	1	30,000	Sept.	1899	.01
117	Triumph	Utah.	1,000,000	100,000	10	1,000	April.	1899	.01
118	Union Cons., g. s	Nev.	250,000	100,000	2½	2,648,000	Sept.	1899	.15
119	Utah Cons., s	Nev.	700,000	100,000	1	485,000	Sept.	1899	.05
120	Valeo	Utah.	200,000	200,000	1	10,000	May.	1899	.05
121	Victory, g. s	S. D.	1,250,000	250,000	5	2,625	Nov.	1899	.00½
122	Watt Blue Gravel, g	Cal.	1,100,000	100,000	10	58,000	May.	1899	.03
123	Work, g	Colo.	1,250,000	1,250,000	1				
124	Yankee Girl	Utah.	250,000	250,000	1	5,000	April.	1899	.02
125	Yellow Jacket, g. s	Nev.	360,000	120,000	3	5,305,000	April.	1899	.15
126	Yellow Jacket	Utah.	300,000	300,000	1	1,500	Dec.	1897	.00½

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. This table is corrected up to August 21. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT PRICES.

Abrasives—	Cust. Meas.	Price.
Carborundum, f.o.b.		
Niagara Falls grains..	lb.	$0.10
Powd., F. FF. FFF..	"	.08
Minute No. 1	"	.15
No. 15	"	1.00
Corundum, N. C.	"	.07@.10
Chester	"	.04½@.05
Emery, Turkish flour	"	.03
Grains	"	.05
Naxos flour	"	.03
Grains	"	.05
Chester flour	"	.03
Grains	"	.05
Peekskill flour	"	.01¾
Grains	"	.02½
Crude, Kuluk, best	lg. ton	18.50
Levant, "	"	22.00
Naxos (Greek) best	"	32.00
Pumice Stone, Am. powd.	lb.	.01@.02
Italian, powdered	"	.01¼
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02½@.03
Lump, per quality	"	.05@.10
Rouge	"	.17@.30
Tripoli, prepared	sh. ton.	20.00
Acids—Acetic, 30% pure.	lb.	.02¾
30% ch. pure	"	.06¼
80% pure	"	.09
Benzoic, English	oz.	.09@.09½
German	lb.	.46@.47
Boracic, pure cryst	"	.11¼
Powdered	"	.11½@.11¾
Carbolic, cryst. in drums	"	.14½@.15½
Carbonic, liquid	"	.15
Chromic, crude	"	.23
Chem. pure	"	.50
Absol. ch. pure	"	1.75
Hydrochloric, ch. pure.	"	.08
Hydrofluoric, 30%	"	.03@.04½
48%	"	.05@.06
Best	"	.25
Nitric, chem. pure	"	.10
Sulphuric, 98%	"	.02
Chem. pure	"	.07
Tartaric, cryst	"	.32
Powder	"	.32½
Alcohol—Grain	gal.	2.42@2.41
Refined wood, 95@97%	"	.75@.80
Purified	"	1.20@1.50
Alum—Lump	100 lbs.	1.65
Powdered	"	2.50
Ground	"	1.75
Chrome, com'l	"	3.50
Aluminum—		
Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	"	.05
Sulphate, pure	"	.02
Com'l	"	1.25
Ammonia—Aqua, 16°	"	.04
18°	"	.04½@.05½
20°	"	.05@.06
26°	"	.07@.08
Ammonium—Bromide, p'r'	"	.52@.53
Carbonate lumps	"	.07¼@.07½
Powdered	"	.08¼@.08½
Muriate, gran., white	"	.06
Lump	"	.08½
Gray	"	.05¾
Nitrate, white, pure (99%)	"	.10½
Phosphate, com'l	"	.2@.15
Chem. pure	"	.60
Antimony—Glass	"	.30@.40
Needle, lump	"	05¼@ 06
Powdered, ordinary	"	.05¼
Best	"	.08¼
Oxide, com'l white, 95%	"	.20
Com'l white, 99%	"	.35
Com'l gray	"	.07@.08
Sulphuret, com'l	"	.16
Arsenic—White	"	.04¼@.04¾
Red	"	.07¾@.08½
Asphaltum—		
Ventura, Cal	sh. ton	32.00
Cuban, refined	lb.	.04½
Common	"	.02
Egyptian, refined	"	.06½
Trinidad, refined	"	.01½
San Valentino	lg. ton	16.00
Gilsonite, Utah, ordinary	lb.	.03¼
Select	"	.03¾
Barium—Carbonate,		
Lump, 80@90%	sh. ton	25.00@27.50
92@98%	"	25.25@29.00
Powdered, 80@90%	lb.	.01¾@02
Chloride, com'l	"	.02¼
Chem. pure cryst	"	.05
Nitrate, powdered	"	.07
Oxide, com'l, hyd. cryst	"	.18@.22
Hydrated, pure cryst.	"	.25
Pure, powd	"	.27
Sulphate	"	.01@.03¼
Barytes—Crude, No. 1	sh. ton	9.00@10.00
No. 2	"	8.00@8.25
No. 3	"	7.75@8.00
Prime White	"	18.00@30.00
Floated	"	19.00@30.00
Bauxite—Georgia, f.o.b.		
cars, first grade	lg. ton	5.10
Second grade	"	4.35
Alabama, f. o. b. [illegible]		
Rock Run	"	3.85
Benzol	gal.	1.00@1.10
Bismuth—Oxide, hydr.	lb	2.25@2.56
Subnitrate cryst	oz.	.09@.10
Bitumen, "B"	lb.	.03½
"A"	"	.05
Bone Ash	"	.02¾@.03¼
Borax—Cryst. and pow'd	"	.07¼
Calcined	"	.20
Bromine—Bulk	"	.45
Cadmium—Metallic	"	1.90@2.00
Sulphide	"	1.90@2.25
Sulphate	"	2.00@2.50

Calcium—	Cust. Meas.	Price.
Carbide, in ton lots, f. o.		
b. Niagara Falls, N.Y.	lb.	.03@.04
Acetate, pure white	100 lbs.	1.00
Gray	"	1.25@1.30
Brown	"	.80@.85
Carbonate, ppt	lb.	.05
Chloride	100 lbs.	.90@1.00
Sulphite	lb.	.05
Cement—		
Portland, Am., 400 lbs.	bbl.	1.50@2.00
Foreign	"	1.75@2.50
"Rosendale," 300 lbs	"	.90
Sand cement, 400 lbs.	"	1.55@1.95
Slag cement, imported	"	1.65
Ceresine—		
Orange and Yellow	lb.	.10½@.11½
White	"	.11@.13½
Chalk—Lump, bulk	sh. ton	2.15@2.25
Precipitated	lb.	.04@.04½
French	100 lbs.	.30@.35
Chlorine—Liquid	lb.	.30
Water	"	.15
Chrome Ore—		
(50% chrome) ex ship	lg. ton	22.00
Sand	"	35.00
Clay, China—Am. com.,		
ex-dock, N. Y.	sh. ton	7.50
Am. best, ex-dock, N. Y.	"	8.50
English, common	lg. ton	11.00
Best grade	"	17.00
Fire, ground, f.o.b. Jersey City, N. J.	sh. ton	4.00@5.00
Slip Clay	"	6.00
Cobalt—Carbonate	lb.	1.50
Nitrate	"	1.30
Oxide—Black	"	1.76
Gray	"	2.25
Smalt, blue ordinary	"	.14
Best	"	.25
Chem. pure	"	5.00
Copperas	100 lbs.	.60@.62½
Copper—Carbonate	lb.	.18@.20
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide	"	.19@.20
Cream of Tartar—crys.	"	.23½
Granulated	"	.24
Powdered	"	.23½@.24
Cryolite	"	.06½
Explosives—		
Blasting powder, A	"	.10@
Blasting powder, B	"	.05@.05½
"Rackarock," A	"	.25
"Rackarock," B	"	.18
Judson R.R. powder	"	.10
Dynamite, (40% nitroglycerine)	"	.15
(50% nitro-glycerine)	"	.17
(60% nitro-glycerine)	"	.19
(75% nitro-glycerine)	"	.23
Glycerine for nitro (32 2-10° Be.)	"	.11@.11¼
Nitro-Benzole	"	.14@.15
Feldspar—Ground	sh. ton	6.50@7.75
Flint—(See Silica).		
Fluorspar—Am. lump	"	6.50@7.00
Gravel	"	6.00
Crushed	"	6.00
Ground	"	10.50@11.00
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.85
Graphite—(See Plumbago).		
Gypsum—		
Am. gr'd (terra alba)	sh. ton	8.00
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—Ground.		
American, best	"	20.00
French	"	37.50
German	"	40.00
Iodine—Crude	100 lbs.	2.45
Resublimed	"	2.85
Iron—Chromate	lb.	.03@.10
Muriate	"	.05
Nitrate, com'l	"	.01¼@.01¾
True	"	.04
Oxide	"	.02@.12
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—Acetate, white, b'k'n	lb.	.07¼
Com'l, broken	"	.06¼
White, gran.	"	.08¼
Nitrate, com'l	"	.06½@.06¾
Chem. pure	"	.35
Lime—Bldg., ab. 250 lbs	bbl.	.65@.75
Finishing	lb.	.75@.80
Magnesite—		
Crude, lump (95%) Greece	lg. ton	7.00
German (85%)	"	12.00
Calcined, 600° C. (Greece)	sh. ton	17.50
1,000° C. (Greece)	"	19.50
3,000° F. (Greece)	lg. ton	30.00
Domestic, soft	sh. ton	12.00@15.00
Bricks, all magnesite	M.	185 00
Magnesite and chrome.	"	226.00
Magnesium—		
Metallic, ingots (Ger)	kg.	5.95@6.90
Powdered (Ger.)	"	6.19
Ribbon or wire (Ger.)	"	10.00
Carbonate	lb.	.10
Chloride, com'l	"	01¾
Fused	"	.20
Nitrate	"	.60
Manganese—Crude, pow'd		
70@75% binoxide	"	.01¼@.01¾
75@85% binoxide	"	.01½@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.03¾@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%	unit	.22@.22½
Marble—Flour	sh. ton	5.50@8.00

Mercury—Bichloride	Cust. Meas. lb.	Price. .59@.60
Bisulphate	"	.41
Mica—N. Y. gr'nd, coarse	"	.04@.05
Fine	"	.06@.08
Sheets, 1½x3 in	"	.60
8x10 in	"	13.00
Mineral Wool—F. o. b. Stanhope, N. J.:		
Slag, ordinary	100 lbs.	1.00
Selected	"	1.67
Extra	"	4.00
Rock, ordinary	sh. ton	37.00
Selected	100 lbs.	4.00
Extra	"	7.00
Monazite—92%	sh. ton	140.00
Nickel—Oxide, bl'k No. 1	lb.	1.00
Black No. 2	"	.60
Green, No. 1	"	1.00
No. 2	"	.60
Oils—		
Black, reduced 29 gr.:		
25@30 cold test	gal.	.07@.07¼
15	"	.08@.08½
Zero	"	.11@12
Summer	"	.06½@.07
Smith's Ferry, 33@34 gr.	"	.07½@.08½
West Virginia, 29 gr.	"	.22@.24
Cylinder, dark steam ref	"	.08@.13
Dark filtered	"	.11@.16
Light filtered	"	.13@.15½
Extra cold test	"	.21@.25
Gasolene, 86° @ 88°	"	.14@.16
90°	"	.19@.20
Neutral filtered, lemon, 33@34 gr.	"	.13@.18½
White, 33@34 gr	"	.21@.23
Wool grade, 32 gr	"	.11@.14
Naphtha, crude, 68@72°	"	.10
Deodorized	"	.10½
Paraffine, high viscosity	"	.20@.25
903-907 sp. gr	"	.09¼@.09½
903 sp. gr	"	.08¾@.08½
883 "	"	.07¾@.07¾
865@875 sp. gr.	"	.07¾@.07½
Red No. 1	"	.08¾@.09¼
No. 2	"	.08¼@.08¾
Linseed, domestic raw	"	.36@.39
Boiled	"	41@.42
Calcutta, raw	"	.54
Graphite, lubricating, Am. dry	lb.	.10
In oil	"	.12
Axle grease	"	.08½@.10
Wood grease	"	.05@.06
Ozokerite—Foreign	"	.06@.08
Paints and Colors—		
Benzine, Sumatra	"	.35@.40
Marbled	"	.27@.28
Chrome green, common	"	.05@.06
Extra	"	.12@.15
Chem. pure	"	.20@.30
Super	"	.10@.12
Yellow, common	"	.10
Best	"	.25
Silica Graphite, thick	"	.12
Thinned	gal.	1.15
Lampblack—Com'l	lb.	.03@.05
Refined	"	.08@.10
Calcined	"	.12@.20
Fine spirit	"	.20@.35
Litharge, Am. powd	"	.05½@.05¾
English flake	"	.07¾@.08
Metallic, brown	sh. ton	16.00@20.00
Red	"	16.00@20.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾@.05
French, washed	"	.01¼@.02½
Orange mineral, Am	"	.07¾@.08¼
Foreign, as to make	"	.08½@.11
Paris green, pure	"	.12@.14
Red lead, American	"	.05¼@.05¾
Foreign	"	.07½@.08
Shellac, "D. C."	"	.27@.30
Native	"	.17@.18
Turpentine, spirits	gal.	.44½@.45
Ultramarine, best	lb.	.25
Vermilion, Amer. lead	"	.14@.16
Quicksilver, bulk	"	.61
Chinese	"	.80@.90
English, imported	"	.65
Artificial	"	.10@.25
White lead, Am., dry	"	.05@.05½
In oil	"	.05½@.06½
English, in oil	"	.07½@.08¼
Whiting, common	100 lbs.	.40½
Gilders	"	.47
Zinc white, Am., ex. dry	lb.	.04¾@.05¼
American, red seal	"	.07½@.08
Green seal	"	.08@.08½
Foreign, red seal, dry	"	.07@.08¾
Green seal, dry	"	.07½@.09¾
Foreign, red seal, in oil	"	.10¼@.11¼
Green seal, in oil	"	.11¾@.12½
Plumbago—Am., pulv., f.o.b., Providence, R. I.	sh. ton	30.00
Lump	"	8.00
German, lump	100 lbs.	1.50@2.00
Pulverized	"	2.25
Ceylon, pulv. common	lb	.03½
Best	"	.05@.08
Italian, pulv	"	.01¼
Potash—Caustic	"	.04@.05
Potassium—		
Metallic, in balls (Ger).	kg.	17.85
Bicarbonate cryst	lb.	.08½
Powdered or gran	"	.12
Bichromate	"	.09¾
Bromide	"	.46
Carbonate	"	.02¾@.03¼
Chromate	"	.35
Cyanide (98@99%)	"	.28@.30
Permanganate, pure cr.	"	.14@.15
Silicate	"	.06
Prussiate, yellow	"	.16½@.17½
Red	"	.37@.40

Potassium—	Cust. Meas.	Price.
Sulphide, com'l	lb.	.10
Quartz—(See Silica).		
Rosin—Common	bbl.	1.30
Best	"	2.65
Salt—N.Y. com. fine abt. 380 lbs	bbl.	.70
N. Y. agricultural	sh. ton	1.50
N. Y. coarse	"	2.30
N. Y. dairy and table	"	2.90
Saltpeter—Crude	100 lbs.	3.80@3.85
Refined	"	4.25@5.50
Silica—		
Ground quartz, ord	sh. ton	6.00@8.00
Best	"	12.00
Lump quartz	"	2.50@4.00
Fire bricks (Blue Welch)	M.	35.00
Silver—Chloride	oz.	.65
Nitrate	"	.41@.42½
Oxide	"	.85@1.10
Sodium—Metallic	lb.	.75
Acetate, com'l	"	.03½
Bichromate	"	.07¾
Bisulphite, com'l	"	.01¼
Bromide	"	.49@.50
Chlorate, com'l	"	.09¾@.10
Hyposulphite	100 lbs.	1.60@1.70
Nitrite	lb.	.07½@.07¾
Peroxide	"	.45
Phosphate	"	.08
Triphosphate	"	.04
Silicate, conc	"	.01@.01¼
Sulphate, gran., puri'd.	"	.03
Sulphide	100 lbs.	1.75
Sulphite	lb.	.02½
Tungstate, com'l	"	.35
Pure	"	.50
Strontium—Nitrate	"	.09@.10
Sulphur—Roll	100 lbs.	1.70
Flour	"	1.80@1.85
Flowers, sublimed	"	2.00
Talc—N. C No. 1	sh. ton	15.00@15.50
No. 2	"	10.00@12.00
N. Y., Fibrous	"	8.00@9.00
French, best	"	20.00
Italian,	"	20.00@30.00
Tar—Coal	bbl.	3.00
Tin—Chloride	lb.	.11@.13
Crystals	"	.22@.23
Muriate	"	.06
Oxide, white, ch. pure	"	.36@.40
Uranium—Oxide	"	1.80@2.00
Zinc—Metallic, ch. pure	"	.09@.10
Carbonate	"	.15
Chloride	"	.06@.08
Dust	"	.07@.07¼
Sulphate	"	.02½

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5 71
Beryllium—Powder	"	5.95
Crystals	"	9.04
Nitrate (N Y.)	oz.	2.50
Boron—Amorphous, pure	grm	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Calcium—Electrol	"	4.28
Cerium—Fused	grm.	2.02
Nitrate (N. Y.)	lb.	21.00
Chromium—Fused	kg.	5.95
Pure powder 95%	"	1.70
Chem. pure cryst	grm.	.21
Cobalt—(98@99%)	kg.	5.35@5.71
Pure	"	30.94
Didymium—Powder	grm.	3.81
Nitrate (N. Y.)	oz.	4.00
Erbium	grm.	3.09
Nitrate (N. Y.)	oz.	3.00
Gallium	grain	9.52
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	oz.	2.50
Indium	grm	4.05
Iridium—	"	2.38
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Nitrate (N. Y.)	oz.	3.50
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Molybdenum—Powder	kg.	2.62
Fused, electrol 95%	100 grms.	15.47
Niobium	grm.	3.81
Osmium	"	.95
Palladium	"	.95
Rhodium	"	2.87
Rubidium—Pure	"	4.76
Ruthenium—Pure powd	"	2.38
Selenium—Com'l powder	kg	30.94
Sublimed powder	"	40.46
Sticks	"	33.32
Silicium—Amorphous	100 grms.	2.87
Crystals, pure	"	5.95
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Ch. p. sticks	100 grms.	11.90
Powder	"	9.52
Thallium	kg.	23.80
Thorium—Metallic	grm.	7.85
Nitrate 49@50% (N. Y.)	lb.	5.00@5.50
Titanium	grm.	.71
Uranium	"	.48
Nitrate (N. Y.)	oz.	.25
Vanadium—Fused	grm.	1.19
Wolfram—Fused	100 grms.	22.80
Powder, 95@98%	kg.	1.90
Chem. pure	"	6.42
Yttrium	grm.	3.33
Nitrate (N. Y.)	oz.	4.00
Zirconium—Com'l	kg.	119.00
Pure	grm.	.71
Nitrate (N. Y.)	oz.	1.00

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to June 16th. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Review of Chemicals and Minerals.